How to get a printed Calendar

Every registered student is entitled to one free copy of the Calendar each year. A Calendar voucher is mailed to students in their Fall registration package, or with their letter of acceptance for the Spring and Summer semesters, and students can pick up their calendar at the Burnaby campus SFU Bookstore or Information and Registration Services at the Harbour Centre campus. Students without a voucher will be charged $3.50 per Calendar. Mailing is an additional cost (in Canadian funds) of $4 (to addresses in Canada), $6 (USA) or $10 (international), GST included.

In addition to in-person and mail-order purchase, you can also call toll-free 1-800-663-4489 (locally 291-5467) and charge your Visa or MasterCard; the "no voucher" costs will apply.

The Calendar is distributed free of charge to all universities, colleges, secondary schools and public libraries in British Columbia, and to all Canadian universities for reference purposes.

Information on Simon Fraser University

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<th>Governing Bodies of the University</th>
<th>Glossary</th>
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| Academic Calendar of Events
| Academic and Campus Services | Simon Fraser University at Harbour Centre | Excellence in Teaching Awards | Calendar Changes and Corrections |
| Enrollment Limitations | The History of Simon Fraser University | Endowed and Sponsored Chairs and Professors | Protection of Privacy |
| Faculty Members | Calendar Production |
# University Telephone Numbers

Area Code 604

## Burnaby Mountain Campus

<table>
<thead>
<tr>
<th>Service</th>
<th>Phone</th>
<th>Fax</th>
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<tbody>
<tr>
<td>Academic Resource Office</td>
<td>291-4356</td>
<td>291-5732</td>
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<tr>
<td>Admissions</td>
<td>291-3224</td>
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<tr>
<td>Analytical Studies</td>
<td>291-3600</td>
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<tr>
<td>Athletic and Recreational Services</td>
<td>291-3611</td>
<td>291-3425</td>
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<td>Athletics</td>
<td>291-3675</td>
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<tr>
<td>Bookstore</td>
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<td>Campus Security</td>
<td>291-3100</td>
<td>291-3469</td>
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<td>Campus Tours</td>
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<tr>
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<tr>
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<tr>
<td>Co-operative Education</td>
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<td>291-4929</td>
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<tr>
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<td>291-3058</td>
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<tr>
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<tr>
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<td>Graduate Studies, Dean of</td>
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<tr>
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<td>Health Services</td>
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<td>Liaison</td>
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<tr>
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<td>291-4908</td>
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<tr>
<td>Media and Public Relations</td>
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<td>291-3039</td>
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<td>Off-Campus</td>
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<td>Ombuds Officers</td>
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<tr>
<td>On-Campus</td>
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<tr>
<td>Orientation (new students)</td>
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<tr>
<td>Parking</td>
<td>291-4577</td>
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<tr>
<td>President's Office</td>
<td>291-4641</td>
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<td>Recreation</td>
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<td>Registrar, Office of the</td>
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<tr>
<td>Residence and Housing</td>
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<td>Security (24 hours)</td>
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<tr>
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<td>Student Society</td>
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<tr>
<td>Winter Road Conditions</td>
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## Harbour Centre Campus

<table>
<thead>
<tr>
<th>Service</th>
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<tr>
<td>Computing Services</td>
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<tr>
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<tr>
<td>Information and Registration Services</td>
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<td>291-5052</td>
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<tr>
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<tr>
<td>Public Relations</td>
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<tr>
<td>Security</td>
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<tr>
<td>University Development</td>
<td>291-5131</td>
<td>291-5140</td>
</tr>
<tr>
<td>Vice-President</td>
<td>291-5217</td>
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### Programs Offered

#### University Degrees

<table>
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<tr>
<th>Honorary Degree</th>
<th>Faculty of Applied Sciences</th>
<th>Faculty of Arts</th>
<th>Faculty of Business Administration</th>
<th>Faculty of Education</th>
<th>Faculty of Science</th>
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</thead>
<tbody>
<tr>
<td>Doctor of Laws</td>
<td>Bachelor of Applied Science</td>
<td>Bachelor of Arts (Honors)</td>
<td>Bachelor of Business Administration</td>
<td>Bachelor of Education (Honors)</td>
<td>Bachelor of Science (Honors)</td>
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<td>Honoris Causa</td>
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<td>Bachelor of Arts (Joint Honors)</td>
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<td>Bachelor of Arts</td>
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<td>Master of Aquaculture</td>
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<td>Master of Science</td>
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<tr>
<td>Bachelor of Science</td>
<td>Bachelor of Fine Arts</td>
<td>Bachelor of General Studies</td>
<td>Master of Arts</td>
<td>Master of Science</td>
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<tr>
<td>(Honors)</td>
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<td>Doctor of Philosophy</td>
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<td>Bachelor of Science</td>
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<tr>
<td>(Kinesiology) (Honors)</td>
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<tr>
<td>Bachelor of Science</td>
<td>Master of Arts in Liberal Studies</td>
<td>Master of Fine Arts</td>
<td></td>
<td>Doctor of Philosophy</td>
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<tr>
<td>(Kinesiology)</td>
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<td>Master of Applied Science</td>
<td>Master of Fine Arts</td>
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<tr>
<td>Master of Arts</td>
<td>Master of Arts</td>
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<td>Master of Engineering</td>
<td>Master of Arts in Publishing</td>
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<tr>
<td>Master of Natural Resources Management</td>
<td>Doctor of Philosophy</td>
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</table>

### Certificates and Diplomas

<table>
<thead>
<tr>
<th>All Faculties</th>
<th>Faculty of Applied Sciences</th>
<th>Faculty of Arts</th>
<th>Faculty of Education</th>
<th>Faculty of Science</th>
</tr>
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<tbody>
<tr>
<td>Post Baccalaureate Diploma</td>
<td>Certificate in Criminality (General)</td>
<td>Certificate in Criminology (Advanced)</td>
<td>Post Baccalaureate Diploma</td>
<td>Post Baccalaureate Diploma in Aquaculture</td>
</tr>
<tr>
<td>Post Baccalaureate Diploma in Kinesiology</td>
<td>Certificate in First Nations Language Proficiency</td>
<td>Doctor of Philosophy</td>
<td>Post Baccalaureate Diploma in Environmental Toxicology</td>
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<tr>
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<td>Faculty of Arts</td>
<td>Faculty of Education</td>
<td>Faculty of Science</td>
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<tr>
<td>---------------</td>
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</tr>
<tr>
<td></td>
<td>Certificate in French Canadian Studies</td>
<td>Certificate in French Language Proficiency</td>
<td>Certificate in Liberal Arts</td>
<td>Certificate in Native Studies Research</td>
</tr>
<tr>
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<td>Certificate in Native Studies Research</td>
<td>Certificate in Public History</td>
<td>Certificate for Senior Citizens</td>
<td>Certificate in Spanish Language Proficiency</td>
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<td></td>
<td>Certificate in Women's Studies</td>
<td>Post Baccalaureate Diploma</td>
<td>Post Baccalaureate Diploma in Community Economic Development</td>
<td>Post Baccalaureate Diploma in Criminology</td>
</tr>
<tr>
<td></td>
<td>Post Baccalaureate Diploma in Ethnic and Intercultural Relations</td>
<td>Post Baccalaureate Diploma in Gerontology</td>
<td>Post Baccalaureate Diploma in Humanities</td>
<td>Post Baccalaureate Diploma in Public History</td>
</tr>
</tbody>
</table>
# Academic Calendar of Events

Undergraduate students should consult the Course Timetable and Registration Instructions published each semester for a more complete calendar of events.

## 1995 Fall Semester

### September

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fri</td>
<td>Last day for students completing degree requirements during Summer to cancel application to graduate in October.</td>
</tr>
<tr>
<td>4</td>
<td>Mon</td>
<td>LABOUR DAY. Offices closed.</td>
</tr>
<tr>
<td>5</td>
<td>Tue</td>
<td>Classes commence.</td>
</tr>
<tr>
<td>11</td>
<td>Tues</td>
<td>Deadline for submission of undergraduate grade changes from Summer semester, Summer session and Intersession. Deadline for undergraduate application for readmission to the Fall semester.</td>
</tr>
<tr>
<td>18</td>
<td>Mon</td>
<td>Last day for graduate students to add courses and register late.</td>
</tr>
</tbody>
</table>

### October

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Mon</td>
<td>Deadline for application for undergraduate admission - Spring semester 1996.</td>
</tr>
<tr>
<td>6</td>
<td>Fri</td>
<td>Fall Convocation for students who graduated in the Summer semester.</td>
</tr>
<tr>
<td>9</td>
<td>Mon</td>
<td>THANKSGIVING DAY. All classes cancelled. Offices closed.</td>
</tr>
<tr>
<td>13</td>
<td>Fri</td>
<td>Certificates and diplomas awarded for 1994/1995 academic year.</td>
</tr>
<tr>
<td>20</td>
<td>Fri</td>
<td>Deadline for submission of undergraduate application for graduation for students completing requirements by the end of the 1995 Fall semester.</td>
</tr>
</tbody>
</table>

### November

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Mon</td>
<td>Last day for graduate students to drop courses without academic penalty except under special procedures applicable in extenuating circumstances.</td>
</tr>
<tr>
<td>13</td>
<td>Mon</td>
<td>In lieu of Remembrance Day, all classes cancelled. Offices closed.</td>
</tr>
<tr>
<td>27</td>
<td>Mon</td>
<td>Last day for graduate students to drop courses under special procedures applicable in extenuating circumstances.</td>
</tr>
</tbody>
</table>

### December

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Mon</td>
<td>Classes end.</td>
</tr>
<tr>
<td>6</td>
<td>Wed</td>
<td>Examination period for undergraduates begins.</td>
</tr>
<tr>
<td>14</td>
<td>Thur</td>
<td>Last date for receipt of grades and grades deferred from previous semester for graduate students. Deadline for submission of graduate theses to the Library.</td>
</tr>
<tr>
<td>16</td>
<td>Sat</td>
<td>Examination period for undergraduates ends.</td>
</tr>
<tr>
<td>25</td>
<td>Mon</td>
<td>CHRISTMAS DAY. Office closed.</td>
</tr>
<tr>
<td>26</td>
<td>Tues</td>
<td>BOXING DAY. Offices closed.</td>
</tr>
</tbody>
</table>

## 1996 Spring Semester

### January

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mon</td>
<td>NEW YEAR'S DAY. Offices closed.</td>
</tr>
<tr>
<td>8</td>
<td>Mon</td>
<td>Classes commence.</td>
</tr>
<tr>
<td>12</td>
<td>Fri</td>
<td>Deadline for undergraduate applications for readmission to the Spring semester. Deadline for submission of undergraduate grade changes from the Fall semester. Last day for students completing degree requirements in December to cancel application to graduate in June.</td>
</tr>
<tr>
<td>15</td>
<td>Mon</td>
<td>Deadline for submission of application to the Professional Development Program for Fall semester, 1996.</td>
</tr>
<tr>
<td>19</td>
<td>Fri</td>
<td>Last day for graduate students to register late, last day to add courses. Last day for undergraduates to register for Course Challenge.</td>
</tr>
</tbody>
</table>
## Simon Fraser University – Academic Calendar ‘95/96

### February

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thur</td>
<td>Deadline for application for undergraduate admission - Summer semester and Intersession 1996.</td>
</tr>
<tr>
<td>23</td>
<td>Fri</td>
<td>Deadline for submission of undergraduate application for graduation, for students completing requirements by the end of the 1996 Spring semester.</td>
</tr>
</tbody>
</table>

### March

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Fri</td>
<td>Last day for graduate students to drop courses without academic penalty except under special procedures applicable in extenuating circumstances.</td>
</tr>
<tr>
<td>29</td>
<td>Fri</td>
<td>Last day for graduate students to drop courses under special procedures applicable in extenuating circumstances.</td>
</tr>
</tbody>
</table>

### April

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Thur</td>
<td>Classes end.</td>
</tr>
<tr>
<td>5</td>
<td>Fri</td>
<td>GOOD FRIDAY. Offices closed.</td>
</tr>
<tr>
<td>8</td>
<td>Mon</td>
<td>EASTER MONDAY. Offices closed.</td>
</tr>
<tr>
<td>9</td>
<td>Tues</td>
<td>Examination period for undergraduates begins.</td>
</tr>
<tr>
<td>18</td>
<td>Thur</td>
<td>Last day for receipt of grades and grades deferred from previous semester for graduate students. Deadline for submission of graduate theses to the Library.</td>
</tr>
<tr>
<td>20</td>
<td>Sat</td>
<td>Examination period for undergraduates ends.</td>
</tr>
</tbody>
</table>

### 1996 Summer Semester

(INCLUDING INTERSESSION, MAY-JUNE AND SUMMER SESSION, JULY-AUGUST)

### May

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Wed</td>
<td>Deadline for application for undergraduate admission - Fall semester 1996.</td>
</tr>
<tr>
<td>3</td>
<td>Fri</td>
<td>Last day for students completing degree requirements in Spring to cancel application to graduate in June.</td>
</tr>
<tr>
<td>6</td>
<td>Mon</td>
<td>Summer semester and Intersession classes commence.</td>
</tr>
<tr>
<td>10</td>
<td>Fri</td>
<td>Deadline for undergraduate application for readmission to the Summer Semester. Deadline for submission of undergraduate grade changes from the Spring semester.</td>
</tr>
<tr>
<td>15</td>
<td>Wed</td>
<td>Deadline for undergraduate application for admission to Summer session (July/August). Deadline for submission of application to the Professional Development Program for Spring semester 1997.</td>
</tr>
<tr>
<td>17</td>
<td>Fri</td>
<td>Last day for graduate students to register late or add courses.</td>
</tr>
<tr>
<td>20</td>
<td>Mon</td>
<td>VICTORIA DAY. All classes cancelled. Offices closed.</td>
</tr>
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</table>

### June

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Thur</td>
<td>Spring Convocation.</td>
</tr>
<tr>
<td>7</td>
<td>Fri</td>
<td>Spring Convocation.</td>
</tr>
<tr>
<td>21</td>
<td>Fri</td>
<td>Deadline for submission of undergraduate application for graduation for students completing requirements by the end of the 1996 Summer semester.</td>
</tr>
<tr>
<td>23</td>
<td>Fri</td>
<td>Intersession classes end.</td>
</tr>
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</table>

### July

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mon</td>
<td>CANADA DAY. Offices closed.</td>
</tr>
<tr>
<td>2</td>
<td>Tues</td>
<td>Summer session classes for undergraduate courses commence.</td>
</tr>
<tr>
<td>5</td>
<td>Fri</td>
<td>Last day for graduate students to drop courses without academic penalty except under special procedures applicable in extenuating circumstances.</td>
</tr>
<tr>
<td>26</td>
<td>Fri</td>
<td>Last day for graduate students to drop Summer semester courses under special procedures applicable in extenuating circumstances.</td>
</tr>
</tbody>
</table>
August

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Fri</td>
<td>Summer semester classes end.</td>
</tr>
<tr>
<td>5</td>
<td>Mon</td>
<td>BC DAY. All classes cancelled. Offices closed.</td>
</tr>
<tr>
<td>6</td>
<td>Tue</td>
<td>Summer semester examination period for undergraduates begins.</td>
</tr>
<tr>
<td>9</td>
<td>Fri</td>
<td>Summer session classes for undergraduates end.</td>
</tr>
<tr>
<td>12</td>
<td>Mon</td>
<td>Summer session examination period for undergraduates begins.</td>
</tr>
<tr>
<td>15</td>
<td>Thur</td>
<td>Last day for receipt of graduate grades and grades deferred from Spring semester. Deadline for submission of graduate theses to the Library.</td>
</tr>
<tr>
<td>17</td>
<td>Sat</td>
<td>Summer semester examination period for undergraduates ends. Summer session examination period for undergraduates ends.</td>
</tr>
</tbody>
</table>

### Academic and Campus Services

#### Academic Computing Services

1001 Strand Hall  
Tel 778.782.3234  
Fax 778.782.4242

In the distributed computing environment at Simon Fraser University an Ethernet-based Unix system allows access to Unix stations, Apple Macintosh, IBM and NEC microcomputers and printers, connected to SFULAN (the high-speed, campus-wide, fibre optic network). This network allows users to communicate electronically with computing facilities across the country and around the world.

Three Silicon Graphics compute servers are provided for large scale computing, three additional Silicon Graphics machines are available for researchers, and two Sun 470's for instructional computing.

Academic Computing Services provides consultative help on a wide variety of computer applications, including statistics, numerical analysis, econometrics, graphics, data handling. Documentation is provided on using the Unix system and the applications available on the system at Simon Fraser University.

The department maintains microcomputer facilities comprising 250 microcomputers for instructional and general purpose use. A text processing facility, consisting of 150 microcomputers, is based in the University library. The Academic Computing Services Information Brochure provides details on all of these facilities. Please call 778.782.3234 for additional information.

#### Academic Resource Office

(see General Information section of this Calendar)

#### Alumni Association

Alumni Relations  
3057 Academic Quadrangle  
Tel 778.782.4154  
Fax 778.782.4958  
E-mail alumni@sfu.ca

Every person who has completed a degree, certificate or diploma program or PDP is a lifetime member of the Alumni Association, which seeks to support and further Simon Fraser University and higher education, and to strengthen the bond between Simon Fraser University and the University's 46,000 alumni.

The Association promotes volunteer service; conducts an annual fund-raising campaign for Simon Fraser University; offers services to members; and supports activities including travel-study and career development programs.

The Alumni Relations Office publishes the Alumni Journal, maintains alumni records, links alumni and University departments, and provides administrative support for the Association and its 15 chapters and regional branches.
The University Archives acquires three major categories of materials:

1. The official records of the University, including those created by the Board of Governors, Senate, University committees, faculties, departments and administrative offices.
2. Materials documenting the wider University community. These records include the private papers of groups such as the Faculty Association, Student Society, University labor unions, Alumni Association, Childcare Centre and the private papers of prominent individual faculty, staff and students.
3. Private historical research collections.

The Archives also holds the original copies of all theses and dissertations approved by the University.

The University's archives are a multimedia collection including film, video and sound recordings; maps, plans and architectural drawings; documentary art; photographs; and electronic records.

Services to Researchers: The reference area is equipped with audio and video equipment. Arrangements can be made for viewing films. Reproduction request for photocopies and photographic copy prints are accommodated whenever possible. Finding aids to various collections are available in hard copy with some computer search capabilities. Information is available about archival collections at other repositories.

Services to the Institution: To help fulfill its mandate, the Archives administers a recorded information management program for the University. The department also operates the University Records Centre, providing temporary storage for official, semi-active records of the University. Archives staff provide consulting and training support to campus offices on record-keeping policy, practices, records retention and disposal. The Department is also responsible for co-ordinating and administering the University's access and privacy program and responding to all formal access requests submitted under the Freedom of Information and Protection of Privacy Act.

Service Hours: The department is open for researchers 9 am to 12:30 pm and 1:30 pm to 4 pm Monday to Friday.

Art Gallery

The Simon Fraser Gallery exhibits and collects art works from Pacific Rim countries with an emphasis on Canada and British Columbia. Temporary exhibitions change every three weeks throughout the active University year.

The Simon Fraser Collection includes several series and individual graphics by Inuit, Native, Contemporary American and Canadian artists, as well as large scale works by major Canadian painters and sculptors.

Special Activities: Lectures and events are organized in collaboration with University departments. Through the loans program, individual works of art are loaned to members of the University community for installation in specific sites on campus.

Open regularly during exhibition dates.

Monday 12 noon - 6 pm
Tuesday - Friday 10 am - 4 pm
Closed weekends and holidays

The Simon Fraser Gallery is administered through the Dean of Arts office, and operates through a Gallery Board.

Department of Athletics

The Department of Athletics is administered through the Dean of Arts office, and operates through a Gallery Board.

Archives

3300 W.A.C. Bennett Library  Tel 778.782.3261  Fax 778.782.4047
The athletics program at Simon Fraser University offers the student, who wishes to represent the University in athletics, a well-organized program, excellent facilities and expert coaching. The program provides opportunities for the athletically talented student to compete on an intercollegiate basis in basketball, football, track and field, cross-country, wrestling, field hockey, soccer, volleyball, golf, softball and swimming.

**Banking Facilities**

222 Transportation Centre  Tel 668-3720

A branch of the Bank of Nova Scotia is located on campus for the convenience of faculty, staff and students, with four off-site automated banking machines located in the south concourse of the Academic Quadrangle, North Concourse and West Mall. Any correspondence should be addressed to The Bank of Nova Scotia, Simon Fraser University Branch, Burnaby, BC V5A 1S6.

**Bookstore**

2nd and 3rd floor (Mall) levels  W.A.C. Bennett Library
Tel 778.782.3656  For hours, information 778.782.5916
Fax 778.782.3401  Toll free in BC 1-800-663-4489

The Simon Fraser University Bookstore carries a wide selection of books, stationery and general merchandise. The book selection includes both course books and general interest books. The Bookstore is the campus outlet for all of the course books required for Simon Fraser University courses. Course books both new and used are located on the lower floor of the Bookstore. The general interest books are located on both floors and include a wide selection of reference books, study guides, literature, travel guides, cookbooks and other subjects of interest to general book buyers. Titles not in stock can be special ordered through the store's special order service. The Bookstore also carries a complete selection of stationery and general merchandise including Simon Fraser University crested sportswear, gift items and Simon Fraser University memorabilia.

The Bookstore is open in the Spring and Fall semesters: Monday, Tuesday and Thursday 9 am - 4:30 pm, Wednesday 9 am - 6 pm, Friday 9:30 am - 4:30 pm and most Saturdays 11:30 am - 4:30. Summer semester hours are Monday to Friday from 9 am - 4:30 pm.

**Campus Security**

Transportation Centre

Tel 778.782.3100 (24 hours)  Campus security patrol, lost and found, campus information, emergency response, security consulting, complaint investigation and referral, crime prevention programs and Safe-walk
778.782.3000 (24 hours)  Medical emergencies
778.782.4500  All other emergencies
778.782.3920  University key control and locksmithing
778.782.4577  Parking permit sales
778.782.4318  Special traffic events, lot reservations, etc.
778.782.5698  Visitors parkade
778.782.4601  Road conditions and operations information

**Parking**

Tel 778.782.4577  Fax 778.782.3469

Please note that parking on campus is very limited and semester parking is by permit only. The following is available to all members of the University community, however a waiting list applies.

- Mall  covered and reserved (renewals only)
- D Lot  (Facilities Management only)
- Outside search lots  a lottery for student permits applies
- B, C and G lots
- Motorcycle
- VB: visitor lot  purchase tickets from dispenser
- Visitor's parkade, West Mall, $1 per hour
Parking permits begin at $44; the price varies from lot to lot. Current and future costs can be obtained from the traffic and parking clerk. Parking is permitted only in signed/authorized areas. Permit parking is enforced 24 hours a day. All roadway parking is prohibited unless so designated. Parking permits and copies of traffic regulations are available at Campus Security.

**Centre for International Students**

2035 Academic Quadrangle Tel 778.782.4232 Fax 778.782.5880

All new undergraduate and graduate international students will be contacted by the Centre shortly after admission to Simon Fraser University has been confirmed. Arrangements can be made with the Centre to meet new students arriving from overseas. Mini and full orientations are offered as well as a Students Helping Students Program. In addition to being a resource to all international students during academic study, the Centre provides support on how to adjust culturally to Canadian university life. New students, especially, are encouraged to visit the Centre where the staff will be pleased to outline the wide range of services available on campus. The Centre is located opposite the Halpern Centre next to SFU Dining facilities.

**Chaplains’ Service**

217/218 Transportation Centre Tel 778.782.3180

Simon Fraser University is served by an ecumenical chaplaincy comprising six chaplains representing Christianity and Judaism. They provide a wide spectrum of social and spiritual services, and they are prepared to help anyone - students, staff, and faculty.

For special events, weekly services and meetings, see The Peak newspaper or call 778.782.3180. Students are warmly invited to visit our drop-in centre and reading room, which is open from 10 am to 3 pm, Monday to Thursday.

**Childcare Services**

Children's Centre West Side of Campus Tel 778.782.4569

Simon Fraser University Childcare Society has twelve different programs offering quality daycare to children of students, staff and faculty. Our unique complex provides full time and part time care to over 250 children aged 3 months to 12 years. The school aged children are transported off campus to attend two local Burnaby schools and are then returned to the complex for a variety of leisure time activities.

All the childcare staff are fully qualified and provide the children with a caring, enriched, developmentally balanced program. Parent participation at the program and Board levels is an important part of our operations.

Fees are payable monthly. Daycare bursaries are available to eligible students, staff and faculty. The Ministry of Social Services also subsidizes daycare fees for those parents qualifying under their financial need criteria. For information and/or a visit call the Daycare Office between 8:30 am and 5 pm (778.782.4569).

**School for the Contemporary Arts**

Information about the School for the Contemporary Arts and its teaching programs is given in the Faculty of Arts undergraduate section. Listed below are services which the school sponsors for the campus community.

**Public Events**

The School for the Contemporary Arts presents Canadian and international professional performances during the Fall and Spring semesters in the Simon Fraser Theatre. In addition, free 12:30 noon concerts are provided every Thursday afternoon during the academic semesters. These feature professional performers as well as studio productions in dance, music and theatre. For a brochure or information on events telephone the Simon Fraser Theatre box office at 778.782.3514.

**Contemporary Arts Summer Institute**

This institute offers professional development, non-credit workshops in various art disciplines and a public performance series. The Burnaby Summer Series, presenting Canadian and international artists. For information contact Tanya Petreman at 778.782.4672.
Counselling Service
2000 Transportation Centre Tel 778.782.3694

The Counselling Service is a comprehensive psychological service providing Programs and services which encourage students to attain their highest potential. It is a setting in which registered students, taking classes, can discuss many of their concerns. All counselling sessions, both personal and career/vocational, are free. All contacts are confidential.

Career Resource Centre: A career planning resource library contains extensive information to assist students in career exploration, selection, and educational planning.

Career Planning Services: Assistance in identifying occupational interests, skills, work values, personal needs, and various career opportunities for the purpose of making and implementing satisfying vocational plans.

Personal Counselling: Times of change and stress may result in anxiety, depression, or feelings of non-empowerment. Individual counselling may often help to understand and resolve problems that interfere with daily living and creative academic work.

Focused Groups: Group discussion of specific areas such as career module workshops, relationships, stress management, assertiveness skills, exam anxiety, eating disorders and graduate information workshops.

Peer Helpers: Simon Fraser University students who have been trained and organized to assist students with reading and study skills and effective career development.

Dining Services
Administrative Office Academic Quadrangle 2028 Tel 778.782.4481 Catering 778.782.4377

Simon Fraser University Dining provides a variety of convenient food outlets offering well-balanced, nutritional meals, fast food services, catering for groups, and convenience store shopping.

We also have the Piper Express cash card which allows students, faculty and staff to purchase their meals on their own prepaid account from any of our dining locations. The following locations are available throughout the academic year. Please note that reduced hours of operation are posted for holidays, semester breaks and the summer semester.

Signatures Cafe
Our own bakery serving freshly made baked goods including pastries, muffins, cinnamon buns, doughnuts, croissants and cookies. Signatures also offers gourmet coffees, specialty sandwiches, soups, prepared salad, made to order Mexican food and pasta throughout the day. Breakfast is served every morning from 8 am to 10:30 am.

Orient Express
An exotic array of Asian foods prepared in exhibition style.

Searious Burgers
Pizza, hamburgers, hot dogs, chicken and fish burgers, chilli, fries, malts and more.

Alexander MacKenzie Cafe
The main dining service featuring hot entrees and sandwiches, baked goods, grab & go snacks, plus an extensive salad bar. Our nutritional entrees change daily and offer a choice of traditional or vegetarian cuisine. Breakfast is available every morning from 7:30 to 10:45 am.

Raven's Cafeteria
Our newest addition, Raven's features a gourmet deli, charbroil grill, salad bar, PizzamorŽ pizza and pasta bar, not entrees, frozen yogurt plus the best view on campus!
Raven's Limited Edition
Cappuccinos soft ice cream, freshly baked gourmet cookies, baked goods and gourmet coffee.

Mountaintop Deli
Made to order gourmet and submarine sandwiches are the specialty here.

Simon C's
Our convenience store on campus sells sandwiches, snacks, beverages, groceries, health and beauty aids, and newspapers.

Simon's Cart
Food carts stocked with hot dogs, pretzels, sandwiches and snacks conveniently located throughout the campus.

Centre for Distance Education
3100 West Mall Centre  Tel 778.782.3524  toll free within BC 1-800-663-1411

Distance Education courses provide an alternative to traditional classroom learning for those students who wish to continue their formal education but cannot attend scheduled classes on campus or at an off campus location. Since 1975, when Simon Fraser University introduced its first five distance education courses to 55 students, the program has grown to over 10,000 course enrollments a year in over 115 credit courses.

The University required that its distance education courses and programs meet the same high standard as on campus equivalents and all courses carry full university credit. Students may complete many certificate, diploma and degree programs entirely by distance education. Each student who takes a distance education course receives a complete learning package containing lecture notes and required assignments. The course may also include a supplementary reading guide, audio and/or video cassette tapes, and slides. Most courses also have required textbooks. Some courses may use the Knowledge Network to televise support materials while others may have on-line computer components.

Each course is assigned a tutor marker who is responsible for grading assignments and assisting students with their course work. All tutor markers have scheduled office hours for telephone consultation.

George and Ida Halpern Centre
Halpern Centre  Tel 778.782.4910  Fax 778.782.3420

The Halpern Centre was donated to the University to be used as a setting for cultural and intellectual endeavours which are not part of the scheduled credit offerings of the University. The centre serves as a venue for events of the highest scholarly, social and cultural value, including lectures by distinguished visitors, discussion groups, seminars, learned conferences, dissertation defenses, art exhibits, musical performances and the like.

The Halpern Centre is also available for booking 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. All 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.
Harassment Policy Office
5126/5128 Academic Quadrangle   Tel 778.782.3015   Fax 778.782.5468

Simon Fraser University has a harassment policy that applies to all members of the University community and includes
discrimination, harassment and sexual harassment.

Discrimination is measured in terms of effects. That is true even through the effects are unintentional. Discrimination is defined
as "a showing of partiality or prejudice in treatment; specific action or policies directed against members of certain specified
groups." The duty to accommodate is included in the duty not to discriminate. The duty to accommodate means the facilities or
methods of operation may have to be modified to avoid discriminatory effects.

Harassment is defined in the policy as "aggressive or threatening behavior which would be considered by a reasonable person to
create an environment unconducive to work or study." Sexual harassment may be physical or psychological and is defined as
"unwanted sexual attention, sexual solicitation, or other sexually oriented remarks or behavior." Harassment can occur between
people of the same or different status within the campus community, and both men and women may be the subject of harassment
by either sex. Reprisal or threat of reprisal is itself considered harassment.

If you feel that you have been harassed, contact the Harassment Policy Office and speak with either Patricia O'Hagan, Co-
nordinator, or Janet Beggs, Intake Counsellor, in confidence at 778.782.3015.

Health Services
2300 Transportation Centre   Tel 778.782.4615

The University Health Service is open Monday through Friday 8:30 am to 5 pm (closed 12 noon to 1 pm except for emergencies).
Medical attention for emergencies during weekends, and after hours, may be obtained by calling the regular Health Service
number.

Health Services provides a full range of medical care for students, faculty and staff. Physicians and nurses provide medical care
in the same manner as a family doctor. Consultants are available for special health problems, surgical procedures, x-rays or
special lab tests. Immunization is held on a regular basis, as is allergy desensitization, and venereal disease control and treatment.
The Psychiatry section employs a full-time psychiatrist on campus. Physiotherapy treatment is available in conjunction with the
Athletics and Recreation Departments. Information is provided for many health-related topics.

Medical files are maintained in the strictest confidence.

The Board of Governors has established that:

☐ as a condition of registration,
☐ all students are required to have
☐ approved hospital and medical Insurance. Medical Insurance: pays for all required services rendered by a medical doctor, as
well as costs for specialists' consultations, x-rays, lab tests or special procedures, and for costs of emergency treatment provided
in a hospital, and for costs while a patient is in hospital.

BC Students

In most instances, students are eligible to continue on a parent's or guardian's medical plan until age 25 so long as the employer
has been notified and is submitting the appropriate premiums.

Students who wish or need to apply for individual coverage should also ask for a "premium assistance" application. Premiums are
then based on income and usually would be much lower; another advantage is that the student would them not be required to pay
the user fee for physiotherapy. This applies to Canadian students from other provinces, landed immigrants (after 12 months of
landed status) but does not apply to visa students.

If you have any questions about your status or eligibility for hospital or medical insurance, telephone Medical Services Plan of
BC, Tel 669-4211 (toll free)
**Students from Another Province**

A person who has moved to BC with the intention of residing permanently qualifies for Medical Services Plan of BC on the first day of the third month of arrival. Tourists, transients and visitors are not permanent residents and therefore cannot qualify. Students are not considered permanent residents unless they work on a full-time basis.

Medical Insurance: Ordinarily, the home province will provide coverage for a 12 month period for students who are in full-time attendance at an educational institution, subject to returning home at least once during the period. This period is renewable as often as appropriate.

A student who decides not to return to the home province, and has lived in BC for twelve months, is eligible to become a subscriber and an insured person on the first day of the month following the twelve month period.

A student who has informed the home province on leaving that he/she intends to take up permanent residence in BC, is eligible to become a subscriber and insured person on the first day of the third month following the month of arrival.

If you have any questions about your eligibility ask for "new registrations" when contacting Medical Services Plan of BC, Tel 669-4211 (toll free).

**Landed Immigrants**

Landed immigrants are eligible for coverage under the Medical Services Plan of BC on the first day of the third month of arrival in BC. Application should be made before the date of eligibility to allow time for processing. The cost is $36 per month for a single person, $70 for a family. In the meantime, information regarding a combined medical and hospital plan is available at the Simon Fraser University Health Services Office for the initial three month period.

**Student Visas**

Visa students are eligible for coverage through the Medical Services Plan of BC on the first day of the third month of arrival in BC. Application should be made before the date of eligibility to allow time for processing. The cost is $36 per month for a single person. Since registered students at Simon Fraser University must be covered by health insurance, persons holding student visas must purchase a combined medical and hospital insurance plan from a private insurance company. Information may be obtained from the Health Services Office on campus.

Applications for the Medical Services Plan of British Columbia are available by calling 669-4211 (toll free). Ask for "new registrations."

**Instructional Media Centre**

7512 Multi Purpose Complex  Tel 778.782.4311

The Instructional Media Centre (IMC) provides the following services.

**Media Collection**

Assistance is available for locating and acquiring films, video tapes, slides, audio tapes and discs from distributors and other institutions. Collections of films, slides, audio materials, videotapes and multimedia programs are available for research and course instruction. Facilities are provided for preview of films and other materials.

**Media Productions Services**

Consultation, design and production of instructional materials is available in formats such as films, animation, TV, audio, photography, digital imaging, and graphics.

**Audio Visual Services (AVS)**

A wide variety of audiovisual and computer equipment for classroom projects is available on a loan basis to students. Advice and instruction in the proper use of equipment is also available. When requested by faculty, audio recordings of lectures can be produced for use by students. The cassettes and a listening facility are accessible in the Library. AV Services has two locations:
South Concourse, room P9301, phone 4828; West Mall Complex, room 2622, phone 5538. Hours of operation are 8 am to 10 pm Monday through Thursday (until 8 pm in the West Mall Complex), and Fridays until 4:30 pm.

**Hours of Service**
The IMC is open from 8 am - 4:30 pm, Monday - Friday.

**W.A.C. Bennett Library**
Burnaby Mountain
Tel 778.782.4351/3869
Fax 778.782.4908
Catalogue via 9600 baud modem (with Unix ID) 778.782.5947
Catalogue via 2400 baud modem 778.782.4721

Collections: The Library collections consist of 1,170,000 bound volumes and over 9,000 currently received serials, and along with other information materials total more than 1.8 million items. The collections are arranged in broad subject divisions: the Humanities are housed on the fourth floor (classification A-D and M-P); the Social Sciences on the fifth floor (DA-L); and the Sciences on the sixth floor (Q-Z). Periodicals are housed on the sixth floor, with current materials in a separate reading room. Individual seating for users is available on all of the collections floors, interspersed among the open stacks and around the outside of each floor.

Strong collections are available to the undergraduate student in all disciplines taught at Simon Fraser University. The graduate student or scholar will also find a growing corpus of research literature available to them. Information available via the library's catalogue includes holdings of the Simon Fraser University libraries, indexes to journals in all disciplines and catalogues of other universities in North America and abroad. Special Collections include the Contemporary Literature Collection, consisting of books, little magazines, tapes, posters and manuscripts of interest to the student of avant-garde poetry. An extensive map collection, now over 70,000 sheets, has been developed to serve the needs of the Department of Geography as well as the other area specializations throughout the University community. The Curriculum Collection consists of copies of curriculum guides and suggested readings prescribed by the Department of Education for use in BC schools. A wide range of Canadian, American, and overseas newspapers has been assembled. A growing collection of sound recordings, scores, slides and films is available for use in the Fine Arts Room. The Research Data Library, located on the fourth floor, acquires, manages, and provides access to computer-readable files of statistical and other types of information such as survey results, census data, stock market prices, etc.

Services: Special facilities offered by the Library include microform readers and printers, tape listening facilities, and photocopying machines. The WordStation located on the second floor contains IBM and Macintosh microcomputers, laser printers and Microsoft Word for student word processing needs. These facilities are in the public areas of the Library. Reserved study rooms, a Braille typewriter, a Visualtek machine and assistance in using library materials are available to disabled persons.

Information: Librarians are available to assist users and provide reference service Monday to Thursday from 9 am to 9 pm Friday 9 am to 5 pm, and Saturday and Sunday from 11 am to 6 pm. Service hours are reduced during the Summer semester, on holidays and during semester breaks.

"Access to Information", a special series of lectures, is available to students in the Library at the beginning of each semester. Librarians give specialized bibliographic lectures for specific courses, when requested by faculty members. Library tours for new students are also offered at the beginning of each semester.

The Innovative Interfaces Inc. integrated computerized library system includes automated circulation and OPAC (On-line Public Access Catalogue) components. These allow users to consult records in the Library collection through user-friendly terminals on all floors. The OPAC can also be accessed through any terminal or microcomputer connected to the campus network, by off-campus computer dial-up, or via Datapac.

Loans: The loan policy is three weeks for in demand items, and semester loan for general circulation material. High usage and course identified materials are gathered in the Reserve Collection and are assigned shorter loan periods.

The circulation system is automated and borrowers are issued ID/Library Cards. Faculty and graduate students may use the Library at the University of British Columbia. Service is obtained from the circulation division of that Library. The BC University Libraries participate in inter-library lending which opens the collections of BC post-secondary institutions to all SFU faculty and students. Hours: Sunday 11 am - 10 pm Monday to Thursday 8 am - 10 pm Friday 8 am - 6 pm Saturday 11 am - 6 pm Normally, the building closes during statutory holidays. Special extended hours are observed four weeks before, and one week during final exams in the Fall and Spring semesters.
Samuel and Frances Belzberg Library
Simon Fraser University at Harbour Centre  Tel 778.782.5050  Fax 778.782.5052

The Belzberg Library has been in operation since January 1989 as a branch library serving the students and faculty of Simon Fraser University at Harbour Centre. The library provides a full range of services including reference, loan of library materials, access to course reserve items and requests for materials from the main W.A.C. Bennett Library. On-line services ranging from a computerized library catalogue to searches of commercial and public databases to a CD-ROM network form an essential element of this "electronic library."

The library collection is developing gradually to support the courses and programs offered downtown. It will grow to over 8,000 books and several hundred journal titles as well as microfilm and fiche collections.

The Samuel and Frances Belzberg Library was developed through the generous donation of the Samuel Belzberg.

Library hours: Belzberg Library service is available Monday - Thursday, 10 am - 9 pm; Friday, 10 am - 7 pm; and Saturday, 10 am - 5 pm.

Media and Public Relations Office
620 School for the Contemporary Arts  Tel 778.782.3210  Fax 778.782.3039

Media and Public Relations Office is responsible for community relations and information dissemination. Major activities include publicizing campus events and achievements, media liaison, publication of Simon Fraser News and the operation of a speakers bureau. News and story ideas are always welcome.

Museum of Archaeology and Ethnology
8602 Northeast Concourse  Academic Quadrangle  Tel 778.782.3325

Monday to Friday 10 am - 4:30 pm, Statutory holidays closed

The Simon Fraser Museum of Archaeology and Ethnology exhibits and collects objects from around the world, with a specific emphasis on the archaeology and ethnology of the native peoples of British Columbia, especially the Northwest Coast.

Quad Books
2002 Academic Quadrangle  Tel 778.782.4164

Monday to Friday 9:30 am - 4 pm

Quad Books is a service of the Simon Fraser Student Society offering a complete line of school supplies, used textbooks and new books. We also carry a variety of gifts and greeting cards.

Used current textbooks are bought at the end and beginning of each term.

Photocopiers are available 24 hours a day outside the store.

Radio Station
216 Transportation Centre  Tel 778.782.3727

CJSF Radio is Simon Fraser University's campus/community station, primarily staffed and funded by the students of Simon Fraser University. The radio station offers volunteer, work study and grants opportunities to members of the campus and the Burnaby community. CJSF is in the process of applying for an FM licence to broadcast at 500 watts.
CJSF plays a very wide variety of non-commercial music from all genres including special interest information programming, live sports casts of Clan and community sports, issues of importance to the campus and community, arts and entertainment, and much more.

CJSF produces and promotes concerts, offers free airtime for public service announcements, promotes independent local bands through its own record label, Three Minute Mile, and sponsors the Acoustic Cafe every Monday night in The Pub.

Department of Recreation
106 East Gymnasium, Tel 778.782.3312

The Recreation Department provides opportunities for members of the campus community (faculty, staff, full and part time students) to learn and participate in a variety of social and physical activities. Program details are published each semester.

Aquatics: Simon Fraser University Aquatics offers a six lane, 25 metre pool, and a diving pool with five and seven meter platforms. The larger pool is used for activities such as lap swimming, deep-water running, children's Red Cross lessons, adult learn-to-swim lessons and advanced leadership courses. The pool serves campus clubs and various community groups. For swimming and course information, refer to the Recreation Booklet or call 778.782.4142.

Non Credit Instruction: These classes offer sequential instruction of up to 10 weeks in a large number of activities suited to varying levels of skill or fitness. The group headings are: aquatics, combatives, dance, racquet sports, scuba, yoga and outdoor recreation. (See Outdoor Recreation below.) Details are found each semester in the recreation booklet or call 778.782.3312.

Intramural Sports: Intramurals are for everyone at Simon Fraser University - students, faculty, and staff. They are designed to meet all levels of aspiration and skill, and to provide a meeting place for people from every part of the University. Frequency of participation varies from involvement in regular league schedules to special events and tournaments. Activities take place both on and off campus, and a wide variety is offered. Details are found in the Recreation Booklet published each semester or call 778.782.4824.

Fitness Classes: Professionally trained instructors and assistants conduct complete, safe, and effective classes. Multi-level, co-ed classes cater to a wide variety of individual needs and include specialty classes such as aquafit, back fitness, circuit training, step and personal training consultations. For further details on fitness classes, CPR, first aid or instructor training, see the Recreation Booklet or call 778.782.3634.

Club Sports: The following extramural clubs are sponsored by the Department of Recreation, and compete in local league and tournament competition (some at a very high level of skill): badminton, cricket, fencing, Frisbee, hapki-do, judo, karate, kung fu, racquetball, rowing, rugby, scuba, skydiving, squash, tai-chi, tennis, men's volleyball, water polo, underwater hockey, and women's golf. For club contacts, consult the recreation booklet or the clubs notice board located on the ground floor of the East Gym or call 778.782.3312.

Children's Programs: The Simon Fraser University Children's Red Cross Swim Program, on Sunday mornings during the Fall and Spring semester, allows 6-15 year olds the opportunity to partake in swimming instructions under nationally certified coaches. For information call 778.782.4434.

Outdoor Recreation Centre: Non-credit courses are offered in backpacking, mountaineering, ski touring, kayaking, scuba diving and more. General information, course outlines and notices for trips are posted at the Information Centre. For office hours and more information, call 778.782.4434.

Residence and Housing Office
On Campus Housing for dormitories, studios, townhouses: 239 Shell House, Tel 778.782.4201
Apartment residence office 430 Louis Riel House, Tel 778.782.4805

There are several residences on campus. - Madge Hogarth House, a women's dormitory residence which accommodates 66 students - Shell House, a co-ed residence which accommodates 152 students - McTaggart-Cowan Hall, a co-ed residence which accommodates 200 students - Hamilton Hall, a co-ed residence which accommodates 104 graduate students in single studio suites - A townhouse complex which accommodates 396 single students in four bedroom townhouses - Louis Riel House, a family apartment building containing 209 one and two bedroom units In the dormitory residences, studios and townhouses,
accommodations are fully furnished and are equipped with stoves and refrigerators. In addition, the townhouses have a dishwasher.

In the apartment residence, units are furnished with a stove and refrigerator. Apartments are reserved for couples, families with children, and single parent families.

Every student entering a residence is required to sign a lease or a rental agreement. It is renewable, based on the completion of Residence and Housing Admittance and Eligibility Policy requirements.

Applications and information for all on-campus residences may be obtained from the Residence Office, 226 Shell House. Applications for Louis Riel House are accepted year-round. Dormitory, studios and townhouse application dates are as follows.

Fall 1995 March 1 - April 30, 1995

Spring 1996 September 20 - October 30, 1995

Summer 1996 January 2 - February 28, 1996

Fall 1996 March 2 - April 30, 1996

Apply as soon as possible within the application period dates. As residence accommodation is limited at the University, priority is given to applicants based on their permanent home address and the date that their completed application and accompanying fee are received by the Residence Office.

Note: Applicants should be aware that an academic application to Simon Fraser University is not an application for residence accommodation; also, an academic acceptance from the University is not an offer of accommodation.

Off Campus

Off-Campus Housing Office 3008 Academic Quadrangle  Tel 778.782.3731  hours 1:30 - 3 pm

The Off-Campus Housing Office maintains a current listing of all types of housing available to students in the neighboring community. This information is posted in front of the Off-Campus Housing Office.

The services of the Housing Office are free to persons listing and to persons seeking accommodation. As a rule, listings are not inspected in any way, but offers of accommodation known to be unsuitable are not listed.

While the staff welcomes enquiries and will offer general guidance, users of this service must make their own final selection.

For general information in advance, write to the Off-Campus Housing Office.

Student Placement Centre

3044 Academic Quadrangle  Tel 778.782.3105

The Student Placement Centre serves students looking for part-time, summer, semester, and permanent employment. New jobs are posted daily.

Students graduating within the next calendar year should inquire about the Centre's on-campus recruiting program.

Staff at the centre liaise with employers to co-ordinate job interviews. Job search skills workshops are held each semester.

Students looking for labour market information, assistance in job search techniques, and résumé preparation can find self help resources at the centre. Students should visit the Student Placement Centre regularly throughout the semester.
The Simon Fraser Student Society was established in 1965 to provide representation, advocacy and services for students. The Student Society is registered under the Societies Act of British Columbia. As a grassroots based organisation the Society is directed by the Student Forum, a council of elected representatives from 31 Departmental Student Unions, and a six member executive which is elected at large. The executive includes a Graduate Issues Officer to provide for graduate student representation. The $46 Activity Fee includes funding for the Student Society as well as other referenda based and contract based organisations, and is allocated as follows.

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Please refer to the breakdown of fees mailed to students semesterly as part of the Course Timetable for more detail.

The Student Society provides a variety of services outlined below, as well as the opportunity for students to get involved in the decision making process within the University. The Student Society is located in the Rotunda at the west end of the campus.

Student Unions and Graduate Caucuses: The Student Society provides funding and administrative support for student unions and graduate caucuses - the grassroots constituencies of the Student Society. Student unions and grad caucuses elect student representatives to departmental committees, provide an opportunity for students to socialize, and organize projects such as film or lecture series, publishing anti-calendars and/or maintaining exam files. Special grants are available for conferences and other extraordinary activities. Working with a student union or graduate caucus, students have a voice on vital issues ranging from course offerings in their departments to government funding of education. The Student Society also represents and provides funding for students in prison at Metchosen and Mountain institutions. The Student Union Fieldworker is available to assist in setting up a student union or organizing a specific event. The Student Society also provides funding for a Graduate Caucus Organiser, a Prison Student Union project worker, and a Student Union project worker to ensure students have access to the resources they need to organize. Please contact the Student Union Resource Office at 778.782.3131, or drop by at AQ 2035.

Ombuds Office: The Student Society believes in the right of students to study in an atmosphere free from harassment and in which the right to a fair disciplinary procedure is respected. The Ombuds Office was established to provide consultation and advice to students on matters of academic discipline, grade, residence and admission appeals, and other areas of University policy and procedure. Ombuds Office staff will investigate complaints about harassment, discrimination, courses, or teaching. (TC 321, 778.782.4563. Hours: Monday to Friday 10 am to 3 pm).

Legal Advice Clinic: The Student Society provides the services of a lawyer every Thursday afternoon to offer free legal advice to members of the Student Society. Appointments should be made in advance through the General Office at 778.782.3181.

University Relations Office: The Student Society coordinates student representation on over 50 University committees. The University Relations Office offers consultation with students on the University governance structure and support for student representatives on University committees. The Graduate Caucus Organiser also works out of the URO and provides organizational and administrative support for Graduate Caucuses. (TC 317, 778.782.3840).
General Office: You can also contact your elected representatives on Student Forum, the Board of Governors, and the Senate through the GO, make room bookings, bookings for the legal clinic, and get information and administrative support. Stamps and Farecards are sold at Quad Books (see below). (TC 321, 778.782.3181).

Resource Office: The office serves as a resource centre for students and other elected representatives on a wide variety of issues which extend or defend the rights of students. If you want information or want to get involved in an issue, stop by the Resource Office, TC 319, 778.782.4494/4450.

Executive Office: The elected At-Large Officers hold office hours at the Executive Office. If you want to get involved or want to contact an Executive of the SFSS, drop by or leave a message at the General Office. (TC 3101A, 778.782.3182/4126)

Quad Books: The Student Society operates a used books store to help students beat the high cost of textbooks. Quad Books also sells stamps and Farecards/Faresavers, gifts, cards, food items, etc. (see Quad Books in this section).

Printing Services: The Student Society Printshop provides a range of low cost printing services for student and campus organisations. The Printshop has facilities for everything from thesis copying to banner printing and acetate overlays. (TC 314N, 778.782.3186)

Student Society Pub: The University Centre Building, located off the Mall, is home to the Student Society Pub. The UCB is overseen by the UCB Board which is comprised of student representatives appointed by Forum, one member of the University administration, and a staff representative. The Pub provides employment for approximately 80 students in any given semester.

The Pub offers a variety of food services including hot soups, burritos, a deli sandwich counter, pizza and specialty coffees. The Pub also offers a licensed beverage service with draught beer, and live entertainment on Thursday Pub Nights. Special entertainment is offered throughout the week such as the Acoustic Cafe on Mondays. The Pub Seminar Room can be booked free of charge for student activities. The UCB also contains a Sports Bar, two pool tables, an electronic games room, and a 48 inch big screen TV.

In addition to providing employment for students, the Student Society maintains a Pub Bursary Fund. $12,500 was given to students from the Pub Bursary Fund last year.

The hours of operation vary throughout the semester, please check the hours posted.

Women’s Centre: The Student Society provides the funding for the Women’s Centre which functions as a resource, information, and referral service for all women on campus. (AQ 2002, 778.782.3670)

Affiliate Organizations
The Peak: The Student Society provides funding for SFU’s autonomous student newspaper. The Peak is published weekly and available free to all SFU students. Tel 778.782.3597.

CJSF is the campus radio station broadcasting widely on campus and in the community, dial 93.9 FM cable. Student participation is encouraged. Tel 778.782.3727.

Canadian Federation of Students: The Simon Fraser Student Society is local 23 of the CFS which is a national student organization dedicated to lobbying for the improvement of post-secondary education, and the condition of students. CFS also provides services such as Travel Cuts, Student Saver, and International Student Identification Card.

Simon Fraser Public Interest Research Group: Members of the Student Society are also members of SFPIRG, a student-run research, action and education group. (TC 304, 778.782.4360)

Statistical Consulting Service
K10513 Shrum Science Centre  Tel 778.782.4670

The service provides advice and assistance in the design of experiments and surveys, and analysis of all manner of data to clients from the community and the University. Launched in 1980, the service draws on the expertise of faculty and graduate students in
mathematics and statistics. Initial consultation is free. The service is a component of the Department of Mathematics and Statistics.

**Students with Disabilities**

3035 Academic Quadrangle   Tel 778.782.4170

Note: If you have a disability which may interfere with studying or living on campus, you should know the facilities and services available to you. Contact Eileen Lennox, room 3035 Academic Quadrangle.

With its compact and connected campus, Simon Fraser University is a convenient place for students with disabilities. The co-ordinator helps students with problems, refers to other offices when necessary, and answers questions about University facilities. Contact the co-ordinator for a brochure and a map showing location of elevators, large washrooms, etc.

Parking: Make special arrangements for parking with Campus Security. Parking is available for disabled students 24 hours a day. To qualify, the student must obtain a letter from the Simon Fraser University Health Services attesting to the disability. On presentation of this letter to Campus Security, the student will receive a special windshield sticker.

Books: Present a list of required textbooks and the Bookstore will arrange for students to acquire them. The Bookstore staff will also escort students onto the elevator so the students can select their own books from the second floor.

Contact Inter-Library Loans in the Bennett Library for access to taped books and the taped books on-demand service. These on-demand materials are produced in the Crane Library at the University of British Columbia. Please make arrangements as early as possible as the demand is particularly heavy at the beginning of the semester.

**University Centre Building**

The University Centre Building (UCB) is the student building on campus. Directed by a board composed of two regular and one alternate member from the student body and appointed by the Simon Fraser Student Society, one member of the student forum, one UCB staff representative, and one member appointed by the Simon Fraser University Administration, it is managed by two co-ordinators and operated by approximately 80 students on part-time staff.

The UCB offers two fast-service lunch counter lines with sandwiches, hot soups, and beverages; a deli sandwich bar; a licensed beverage service with draught beer; and live entertainment nightly. We also offer pizza by the slice. The building also has a seminar room which can be booked free of charge, a games room with electronic games, and two pool tables.

The food service is open from 7:30 am - 11 pm Monday - Friday and 11 am - 7 pm on Saturday and Sunday. The deli-lunch bar is open 11 am - 2:30 pm weekdays. The beverage service operates from 12 noon to 11 pm Monday - Friday and 12 noon - 7 pm Saturday and Sunday.

Come in and try our services. Admission is free to the University community. Guests may be charged a small entrance fee Thursday nights.

**Women's Centre**

2003 Academic Quadrangle   Tel 778.782.3670   Fax 778.782.5843

The Simon Fraser Student Society Women's Centre addresses the needs of women on campus. Set up as a comfortable drop-in space and resource centre, it is open to all women - whether students, staff or faculty.

The Women's Centre lounge, open 24 hours a day, provides women with a non-smoking place to study, talk, eat and meet with other women. Adjoining the lounge is a library and resource office, generally open at last 15 hours a week.
The library offers a range of women-centred books, periodicals and information files. Subjects include literature, aging, health care, sexuality, parenting, violence against women, science and technology, public policy, lesbian studies, spirituality, feminist theory, cross-cultural studies, literature and so on. Library users are encouraged to take out a Women's Centre membership at a cost of $2 per semester or $5 per year for non-students. Students pay no membership fee as their Student Activity Fee already supports the Women's Centre and its library. Men wishing to access the Women's Centre library are welcome to borrow materials through the SFU PIRG office. (The Simon Fraser Public Interest Research Group holds a copy of our current library index.) They can be reached in TC 3100 or at 778.782.4360.)

The resource office acts as a referral service to university and community resources of interest to women. In addition, a variety of workshops and other programs are organized each semester. Past topics have included single parenting, self-defence, birth control, sexual assault and harassment, international politics, peace and environment campaigns, health care, education, the arts, technology, professional opportunities, as well as various social events. There are also ongoing discussion/support groups for women who share particular experiences or interests. Such groups have included Women of Colour, Women in Science, Dyke Talk, Mature Students, Single Parents, and so on. Each semester, the variety of discussion groups and their meeting schedules are adapted to meet the needs of interested women.

The Women's Centre is run by a Collective comprised of a part-time co-ordinator and a diverse volunteer group. Collective meetings are held regularly and are open to all Simon Fraser women. Volunteers are always welcome - to join the Collective, or to participate in other aspects of the Women's Centre activities.

Centres and Institutes

Institute for Applied Algorithms and Optimization Research
Director: Dr. A.L. Liestman  Tel 778.782.4197  Fax 778.782.3045

The institute was established in 1994 to stimulate, encourage, and enhance research and technology transfer in the areas of Applied Algorithms and Optimization by providing a focus and resource base for collaborative and multidisciplinary research. The group conducts research in algorithms and their complexity as well as the mathematics underlying these algorithms. Although much of this work is basic science, the results obtained in this area have extremely important implications to practitioners. A primary goal of the institute is to foster increased awareness of these results by industry. The institute provides a vehicle for disseminating known results and stimulating new work on relevant problems. The members of the institute are faculty from Simon Fraser University's School of Computing Science, School of Business Administration and Department of Mathematics and Statistics.

Institute for Aquaculture Research
Acting Director: Dr. C.H.W. Jones  Tel 778.782.3771  Fax 778.782.3424

The institute serves as a professional and public forum for the exploration and communication of contemporary problems in aquaculture. Our members, drawn from the disciplines of biology, business, economics, and resource management, are dedicated to interdisciplinary collaboration in aquacultural research. Activities of the Institute include extension projects (workshop, short courses) and collaborative research with government, industry, and other institutions of higher learning.

Western Canadian Universities Marine Biological Station (Bamfield)
Director: Dr. A.N. Spencer  Tel (604) 728-3301  Fax (604) 728-3452
Contact: Dr. B. McKeown  Tel 778.782.3535

The Western Canadian Universities Marine Biological Society was founded in 1969 with the objective of operating a major research and teaching facility in marine biology on the west coast. The Bamfield Marine Station 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 station also runs a public education program from September through April.
The Behavioural Ecology Research Group was formally established in 1989, to pursue basic research in the field of behavioural ecology; to maintain and further develop an internationally recognized training centre for students in behavioural ecology, and related areas of inquiry; and to provide a service to government, industry and other organizations, so that basic and applied problems in behavioral ecology can be tackled through collaborative research. Members are drawn from the Departments of Biological Sciences, Psychology and Archaeology.

Established to focus research efforts on the 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 Harbour Centre campus where faculty and business executives can 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 classrooms.

The Canadian Centre for Studies in Publishing was established in 1987 to pursue the study of publishing and to serve the research and the information needs of the publishing industry. The centre engages in basic research into the history, social history, management and the policy issues related to the industry. Projects are both initiated by the centre and undertaken under contract to government and industry. The research work of the centre involves faculty, graduate students and independent researchers from a variety of disciplines. The centre published monographs and reports on the theory and practise of publishing and sponsors seminars, conferences and short courses.

The Institute for Canadian Urban Research Studies is intended to further multidisciplinary research on urban issues. More specifically its objectives are: to provide a focus for research about urban problems and issues in Canada; to promote interdisciplinary collaboration and research at Simon Fraser University; to provide an institutional focus for international scholarship concerning urban problems; to provide a forum within Canada for the presentation and dissemination of research on 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 Chemical Ecology Research Group was established in 1981 to provide an international graduate training centre in chemical ecology; to offer a service to government and industry; to isolate, identify and synthesize semiochemicals; and to apply the results of basic research to the practical use of semiochemicals.

The centre uses the resources and talents of the University to encourage accountable and sustainable community economic development in British Columbia. Research by multi-disciplinary teams is combined with active involvement in community-based projects. The focus of the centre is on how communities can overcome disadvantages by achieving access to knowledge, programs, markets and funds.

The Laboratory for Computer and Communications Research

Director: Dr. T. Kameda  Tel 778.782.3307
The Laboratory for Computer and Communications Research was established in 1982 to promote inquiry into the problems of computer and communication research; to foster co-operative efforts between the University, industry and government agencies; and to sponsor distinguished visitors. The laboratory received a $250,000 NSERC Major Installation Grant and a $120,000 NSERC Infrastructure Grant in its first two years of operation.

**International Centre for Criminal Law Reform and Criminal Justice Policy**
Director: D.C. PrŽfontaine  Tel (604) 822-9875  Fax (604) 822-9317

The International Centre for Criminal Law Reform and Criminal Justice Policy was established in 1991 in Vancouver, BC. It is a joint initiative of Simon Fraser University, the University of British Columbia and the Society for the Reform of Criminal Law. The Centre is housed at the University of British Columbia.

The Centre's association with Simon Fraser University and the University of British Columbia allows it to marshal effective interdisciplinary teams for work in criminal law and criminal justice policy research and education. The Centre is involved in the furthering of graduate courses and research in the areas of criminal law and justice policy with an international/comparative focus.

The Centre's primary role is to provide advice and assistance on matters related to the reform of criminal law and criminal justice policy. The Centre also launches an increasing number of national and international education and training initiatives. These include the design and delivery of training in human rights and justice administration as well as the organization of international exchange programs and workshops.

**Institute for Studies in Criminal Justice Policy**
Co-directors: Dr. J.W. Ekstedt  Tel/Fax 778.782.4469  Dr. M.A. Jackson  Tel 778.782.4040

The Institute for Studies in Criminal Justice Policy 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 and justice system personnel can assemble to apply scholarly research to policy development and analysis. The Institute undertakes projects on its own initiative as well as under contract. In 1995 the Institute was confirmed as an associate member of the International Foundation for Public Policy Research based in New York.

**Criminology Research Centre**
Director: Dr. W. Glackman  Tel 778.782.4041/4127

The Criminology Research Centre was established in 1978 to facilitate criminological research by faculty and graduate students. Funds to establish and maintain the centre are provided by a contract from the Federal Solicitor General's Department. Additional grants and contracts have since been obtained from other provincial, federal and private sources. The centre publishes a series of working papers based on reports and other manuscripts generated by the various research projects, and also maintains a modest library for the use of faculty and students.

**Centre for Education, Law and Society**
Co-directors: Dr. M. Manley-Casimir  Tel 778.782.4787  W. Cassidy  Tel 778.782.4484

The Centre for Education, Law and Society 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 youth and adults through teaching, program and curriculum development and research.

Its projects range from the use of mock trials as teaching methods in law-related education, to the application of alternative dispute resolution methods, to investigations into human rights, international law and world order.
Environmental Science Research Institute
Acting Director: Dr. T.N. Bell  Tel 778.782.4463

Established in 1991, the goals of the institute are to foster research in the broad field of environmental science, to provide a vehicle for interdisciplinary research applications, to provide a forum to disseminate and discuss research findings, and to promote recognition of Simon Fraser University based researchers. Members are drawn from Biological Sciences, Chemistry, Physics, Mathematics and Statistics, Geography, Kinesiology, and Resource and Environmental Management.

Centre for Experimental and Constructive Mathematics
Director: Dr. J. Borwein  Tel 778.782.3331  Fax 778.782.4947

The Centre for Experimental and Constructive Mathematics is intended to further research and graduate education in computation in the mathematical sciences.

The Centre's activities may include the following: 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 constructive mathematics; participation in the training of graduate students in experimental and constructive mathematics; establishment, development and maintenance of accessible software archives; provision of tutorial assistance for faculty and graduate students at Simon Fraser University in the use of symbolic languages, of the centre's software, and of other high level mathematical tools; establishment of a related algorithmic consulting service for individuals within and without the University community; collaboration with similar centres and appropriate individuals at other Canadian and foreign universities. Such collaboration may include co-sponsorship of speakers, conferences and visitors, joint application for external research funds, exchange of software and expertise, establishment of a Canadian mathematical computation network.

Subject to the approval of the director, the centre's membership will be open to Simon Fraser University faculty, post-doctoral and graduate students actively involved in mathematical computing. Associate membership will be available to faculty at other universities.

Institute of Fisheries Analysis
Director: Dr. T. Heaps  Tel 778.782.4893

Established in 1980, the institute promotes research and study of a broad range of questions, and accommodates visiting scholars, concerned with fisheries. Areas of interest include the basic biology, ecology and population dynamics of exploitable fish stocks, the bio-economic and socio-political framework of fisheries regulation and management, the socio-economic well-being of fishing communities, industrial and commercial developments related to fisheries, and the political economy of the fishing industry. The institute encourages interdisciplinary team research among its members, and maintains a Fisheries Research Papers Series. Where appropriate, it will administer members' research projects and undertake contract research, utilizing the services of its members as research principals.

Feminist Institute for Studies on Law and Society
Director: Dr. M.A. Jackson  Tel 778.782.4040

The Feminist Institute for Studies on Law and Society was established in 1990 to facilitate and continue the development of feminist analyses on law and society at Simon Fraser University. It is designed to provide an environment for creative interaction among scholars and community representatives who are involved in its work locally, nationally and internationally, and to bridge gaps between legal and social science research.

Gerontology Research Centre
Director: Dr. G. Gutman  Tel 778.782.5062  Fax 778.782.5066

Established in 1982, the Gerontology Research Centre promotes and conducts research on topics relating to aging and the aged, serves as a clearing house for information 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 and aging; prevention of victimization and exploitation of the elderly; and changing demography and lifestyles. The
associated Gerontology Program offers a Post Baccalaureate Diploma in Gerontology and has a Master in Gerontology program under development.

_Institute of Human Factors and Interface Technology_
Director: Dr. D. Weeks  Tel 778.782.4980

The Human Factors and Interface Technology Institute will stimulate, encourage, and enhance human factors and interface technology research by providing a focus and resource base for collaborative and multi-disciplinary research that will promote technological transfer to a wide array of applications. Human Factors considers people to be at the centre of any situation. For example, the design of human computer interfaces, the redesign of a work area, or the development of new products, all require human factors input to ensure that the situation systematically considers the physical, psychological and social characteristics of people.

_Centre for Human Independence Engineering_
Director: Dr. A. Rawicz  Tel 778.782.3819

The centre was established to promote and enhance basic and applied research on human disabilities, methods or preventing them, and reenabling them through technology when incurable. The main purpose of this research is for physically or mentally disadvantaged people to regain independence for their full and productive integration with society. The involvement of undergraduate and graduate students in the activities of this centre will increase their awareness of the world of disabilities.

_Institute for the Humanities_
Director: Dr. J. Zaslove  Tel 778.782.4868/5855  Fax 778.782.5788

The Institute for the Humanities provides various means to support and develop Humanities programs and Humanities concepts which are in existence throughout the University. The institute is devoted to the exploration and dissemination of knowledge about traditional and modern approaches to the Humanities, and is dedicated to the exploration of critical perspectives that relate social concerns to the cultural and historical legacy of the Humanities. The institute initiates and plans interdisciplinary programs, conferences, seminars, research, publications and courses in a range of interrelated fields in the Humanities and Social Sciences. The audience for these activities will be found in the University and the community. The Institute and the Humanities minor program are affiliated. A complete outline of the institute's current projects is available through the office of the Director.

_Centre for Image and Sound Research_
Executive Director: J. Bizzochi  Tel (604) 669-7943

The Centre for Image and Sound Research is an independent non-profit foundation which conducts and supports research and development in the cultural industries - technologies which serve the fine and performing arts, popular media and media-based entertainment and live performance. The specific areas for research and development are digital post production, computer graphics, live performance and interactive media. An interdisciplinary organization, the centre provides a environment in which technology suppliers, industry, government and academic researchers and artists can collaborate on research projects or mutual interest. Current activities include active projects, projects in development, a focus group series and an on-going information and liaison service.

_David Lam Centre for International Communication_
Director: Dr. J.W. Walls  Tel 778.782.5111  Fax 778.782.5112

This interdisciplinary centre, which began operation in 1989, integrates university, government, professional and business resources for education, training, research and development activities. Its focus is on international, intercultural, and interlingual communication with a special emphasis on the people and institutions of the Pacific Rim. Programs include international communication research and development projects, Chinese and Japanese culture and communication courses and workshops, cross-cultural management and communication courses, and the Pacific Region Forum on Business and Management Communication.
Logic and Functional Programming Group
Director: Dr. V. Dahl  Tel 778.782.3372/3426
Contact: Dr. J.W. Han  Tel 778.782.4411

This group was established in 1990 to facilitate research on using declarative programming tools (in particular logic programming, functional programming, constraint logic programming and logic grammars) to investigate the theoretical and practical aspects of developing Fifth Generation Computing software. It is a strongly interdisciplinary group comprising members from six Simon Fraser University units (Computing Science, Linguistics, Mathematics, Centre for Systems Science, Education, Engineering Science) and two University of British Columbia units (Linguistics and Computing Sciences) and from the University of Victoria and Aizu University. Members' interests include logic and functional programming theory and tools, natural language processing, linguistic theory automation, deductive data bases, knowledge representation, hardware design and expert systems.

Mental Health, Law and Policy Institute
Director: Dr. R. Roesch  Tel 778.782.3370

The Mental Health, Law and Policy Institute was established in 1991 to promote interdisciplinary collaboration in research and training in areas related to mental health, law and policy. 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. 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.

Institute of Micromachine and Microfabrication Research
Director: Dr. A.M. Leung  Tel 778.782.3455

The 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 of Molecular Biology and Biochemistry
Director: Dr. B.P. Brandhorst  Tel 778.782.4627

The Institute of Molecular Biology and Biochemistry is an interdisciplinary institute established between the Departments of Biological Sciences and Chemistry. It was formed to provide a cohesive intellectual and administrative body to enhance and promote basic research in molecular biology and biochemistry and to co-ordinate graduate education in these disciplines.

Centre for Policy Research on Science and Technology
Director: Dr. C.A. Murray  Tel 778.782.4341  Fax 778.782.5112

The primary focus of research in the centre is the relationship between public policy and the management of technology. The emphasis on public policy means that the research will investigate the regulatory environment, which is a product of the interaction between private and public sectors of society. This regulatory environment acts to stimulate, monitor, and control the processes of technological innovation. Some of the major topics of this research will be: public sector technology policy, such as assessing the costs and benefits of policies designed to promote innovation; risk management, that is, identification and control of environmental risks associated with the utilization of industrial technologies; and the assessment of standards and intellectual property rights as they affect the products of innovation.

Institute for Quaternary Research
Director: Dr. M.C. Roberts  Tel 778.782.3723

The Institute for Quaternary Research was established in 1984 to focus Quaternary science projects through an interdisciplinary team consisting of Simon Fraser University faculty from six departments and external associates from other organizations and universities. The institute presents a regular series of research seminars for faculty and graduate students and from time to time expects to host conferences, symposia, and field excursions. The institute aims to serve western Canada as a centre for paleo-environmental, surficial geological and related archaeological investigations.
Centre for Systems Science
Director: Dr. T. Calvert, Tel 778.782.4588

The Centre for Systems Science (CSS) is a multidisciplinary research institute which supports specialized research areas and advanced educational programs in related disciplines which promise to offer particular support for the development of sophisticated industry for British Columbia. CSS fosters basic and applied research within its three research groups: Intelligent Systems (artificial intelligence, robotics, cognitive science, neural networks, expert systems, graphics and animation, etc.), Microelectronics (surface science, VLSI design and test, quickchip), and Computer and Communications (subsea communications, mobile communications, communications policy, algorithms, distributed computing, information systems, signal processing, applications, etc.). CSS encourages associations across departmental boundaries to stimulate interest and knowledge of systems science and help attract a significant level of research funding. The Centre for Systems Science represents the British Columbia Advanced Systems Institute at Simon Fraser University and collaborates with other research units at Simon Fraser University, the University of British Columbia, the University of Victoria, the British Columbia Institute of Technology, and with BC industry and government sectors.

Institute for Studies in Teacher Education
Acting Director: Dr. M.F. Wideen, Tel 778.782.4948

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.

Centre for Tourism Policy and Research
Director: Dr. P.W. Williams, Tel 778.782.3074, Fax 778.782.4968

The Centre for Tourism Policy and Research was established in 1989 to provide leadership in developing and delivering research and professional education in the management of tourism. The centre provides a fixed point for graduate level studies and professional development education with a distinctively integrated resource and business management orientation. It also encourages and conducts policy, planning and management research designed to enhance the sustained use of the tourism resource base.

Tri-University Meson Facility (TRIUMF)
Director: Dr. A. Astbury  Tel 604-222-1047
Contacts: Dr. B. Clayman  Tel 778.782.4152  Dr. C.H.W. Jones  Tel 778.782.3771  Dr. R.G. Korteling  Tel 778.782.3532

TRIUMF is Canada's national meson facility and a laboratory of world class standing. The facility is based on a 500 Me V H ion accelerator which provides intense beams of subatomic particles for use in a wide range of research projects in nuclear and elementary particle physics.

Dr. Frank Linville Institute in Sensory Research
Director: Dr. K. Colbow  Tel 778.782.3162

The institute, formerly known as the Wright Institute for Sensory Science, provided since 1986 research support to faculty members, post doctoral fellows and graduate students in sensory science. The main emphasis has been on research at Simon Fraser University in salmon migration, insect behavior and gas sensors, with some support going to other institutions and the publishing of the Linville-Wright Lectures by recipients of the Linville-Wright Award. Initial funding was provided anonymously by General Monitors, Inc. of Costa Mesa, California and its late CEO Dr. Frank Linville. Following his death in 1991, continued funding for the award and the institute has been provided by Mrs. June Linville.

Simon Fraser University at Harbour Centre
515 West Hastings Street, Vancouver, BC V6B 5K3
Tel 778.782.5000, Fax 778.782.5008
Vice President J.P. Blaney BEd, MEd (Br Col), EdD (Calif)
Executive Director W.G. Gill BA, MA, PhD (Br Col)
Simon Fraser University is committed to the renewal of individuals and organizations through programs of advanced learning. Ten years of planning and close collaboration among representatives of the University and the business, professional and cultural communities, the City of Vancouver and the Province of British Columbia laid the groundwork for the Harbour Centre campus which opened in 1989.

We continue to seek the advice and participation of the downtown community in the development of Harbour Centre's mission and programs. The University's chancellor, Dr. Joseph Segal, gave over right years of outstanding leadership to the drive to build Harbour Centre. The downtown campus is designed to provide continuity between work and study within an environment created specifically for advanced learning - and built largely through private sector funding - that offers a range of programs and services directed to mid-career intellectual and professional growth.

Harbour Centre is in, and of, the city: in the city for accessibility, and of the city so that the University may have access to the ideas, concerns and skills of those who live and work in urban centres.

The heritage Spencer Building at Hastings and Richards that houses the campus is located in the commercial heart of rejuvenated "old" Vancouver. For six decades, Spencer's, Eaton's and Sears took advantage of this centrality; now Simon Fraser University maintains the Spencer Building's prominence in the lives of those who live and work "downtown."

Simon Fraser University at Harbour Centre provides over 140,000 square feet of instructional resources for advanced education. Each classroom, lecture theatre and laboratory was designed with its particular educational purpose in mind and is equipped with complete audio-visual resources.

The campus currently serves over 50,000 people annually. Each semester 2,000 undergraduates and 200 graduate students take formal credit courses, and thousands of individuals, groups and companies take advantage of continuing studies education opportunities and public programs, or use the campus for public, corporate and other meetings.

**Information and Registration Services**
Tel 778.782.5000, Fax 778.782.5060
Hours 9 am - 7:30 pm Monday to Thursday, 9 am - 5 pm Friday, (reduced hours may be in effect during semester breaks)

Director D.B. Johnston BA (S Fraser), MA (Br Col)

The office provides a wide range of services for all Harbour Centre students and prospective students including, but not limited to:

- information on all programs at Harbour Centre
- information on courses, programs and services at the Burnaby Mountain campus
- information on graduate programs
- assistance and information on admission to, and registration in, undergraduate and credit-free courses
- information on distance education courses and programs
- course changes
- fee payments
- academic advice

The Simon Fraser University at Harbour Centre catalogue of programs, courses and events as well as brochures describing individual programs are available at Information and Registration Services.

**Admission and Registration**

Registration in undergraduate and graduate courses is a two-step process. Students must first have been admitted to the University before they may choose the courses in which they wish to participate. Prospective applicants should note that admission to the University is competitive and that applications should be completed as early as possible. It is also important to note that consideration for admission is given for the University as a whole and is not specific to any campus. Therefore, students wishing to take undergraduate or graduate courses only at the Harbour Centre campus must meet all the admission requirements as approved by the University Senate. For further information about undergraduate or graduate entrance to Simon Fraser University please see the appropriate sections of the Calendar.
Those who are currently students of the University can select Harbour Centre courses through the usual course registration process. For detailed information on undergraduate course selection please refer to the Registration section and for graduate information please see the General Regulations, Graduate.

Registration for and/or admission to most credit-free programs is on-going and continues until the program or course is full. Interested students should call Continuing Studies at 778.782.5100 for information about specific programs.

**Samuel and Frances Belzberg Library**
Tel 778.782.5050, Fax 778.782.5052
Hours 10 am - 9 pm Monday to Thursday, 10 am - 7 pm Friday, 10 am - 5 pm Saturday (reduced hours are in effect during semester breaks)

Head K.V. Marotz BA (S Fraser), MLS (Br Col)

Belzberg Library serves students, staff and faculty of Simon Fraser University at Harbour Centre 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. On-line services form an essential element of this "electronic library." A computerized library catalogue, searches of commercial and public databases, CD-ROM systems, and access to library files on the campus network are all available.

The library collection is developing to support the courses and programs offered downtown. It will grow to over 8,000 books and several hundred journal titles as well as microfilm and fiche collections.

Library Cards: The student identification card serves as library card; it is issued to Harbour Centre students enrolled in credit courses by Information and Registration Services. Students in credit-free courses at Harbour Centre may request a library card from the Belzberg Library. Cards for external users are available for an annual fee of $50.00.

Textbooks: All downtown credit and credit-free course textbooks are sold from a new branch of the Simon Fraser University Bookstore located in the Harbour Centre Mall.

**Academic Computing Services**

Royal Bank Instructional Computing Facility
Tel 778.782.5030
Hours 10 am - 10 pm Monday to Thursday, 10 am - 7:00 pm Friday, 9 am - 12 noon and 1 pm - 4:30 pm Saturday, closed Sunday

Manager M. Jutras

The Royal Bank Instructional Computing Facility at the Harbour Centre campus has four well-equipped teaching labs and a drop-in centre that may be used by students, faculty and Simon Fraser University 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 present a valid library card or an authorized provisional use card to the lab attendant before using the facilities.

Macintosh Lab: Equipped with 16 Apple Macintosh IIsi microcomputers for students and an additional machine connected to an overhead LCD display for use by the instructor. The lab is connected to a Novel network server, HP IIIsi laserprinter, as well as Unix and other campus network services.

IBM Lab: Equipped with 16 IBM VP 486DX microcomputers for students and an additional machine connected to an overhead display for use by the instructor. The lab is connected to a Novell network server, laser printer, as well as Unix and other campus network services.

IBM Annex Lab: Equipped with eight student machines and one instructor machine, this smaller lab has the same equipment and services as the main IBM lab.
Drop-In Centre: Equipped with six Macintosh and 10 IBM VP microcomputers offering the same services as the other two labs, as well as a disk conversion machine. This area may not be reserved.

Himie Koshevoy Publishing Lab
Hours 10 am - 10 pm Monday to Thursday, 10 am - 7:00 pm Friday, 9 am - 12 noon and 1 pm - 4:30 pm Saturday, closed Sunday

The Himie Koshevoy Publishing Lab which is located on the second floor at Harbour Centre is equipped with 10 Macintosh Centris 650 computers with two page color displays. The lab also has an 11x17 printer, color scanner, CD-ROM player and a syquest drive. Access is by means of a valid SFU picture ID card.

Lectures, Exhibitions and Special Events
Tel 778.782.5100

Simon Fraser's campus community and the general public are invited to attend the many noon hour and evening lectures, performances and/or special events held at Harbour Centre. These events include the Leon and Thea Koerner Foundation Lectures in the Liberal Arts, the Arts at Night series and others. Events in these public series are free, but seating is limited. Please write or telephone to add your name to the mailing list.

Teck Gallery
Tel 778.782.5126

The Teck Gallery Lounge in the concourse of the downtown campus shows regular exhibitions of art and design. The emphasis is local, with some international and historical exhibitions. Both western and eastern traditions are represented.

**Undergraduate and Graduate Programs**
Simon Fraser University offers graduate and undergraduate credit programs as well as professional development programs at the Harbour Centre campus. These programs are directed toward the advanced recurring educational needs of the urban populace.

At the introductory undergraduate level are certificate programs requiring approximately 30 credit hours of study. Diploma programs consist primarily of 3rd and 4th year undergraduate courses. Courses for the programs listed below are often offered at the Harbour Centre campus. Refer to the Calendar Index to locate information about these programs.

Certificate in Actuarial Mathematics
Certificate in Health and Fitness Studies
Certificate in Liberal Arts
Certificate for Senior Citizens
Post Baccalaureate Diploma in Community Economic Development
Post Baccalaureate Diploma in Ethnic and Intercultural Relations
Post Baccalaureate Diploma in Geronotology
Post Baccalaureate Diploma in Urban Studies

Additional undergraduate courses are also offered on a regular basis in business administration, international communication and other disciplines. For current offerings telephone 778.782.5000.

At the graduate level, two programs are offered at Harbour Centre at the present time - the Executive Master of Business Administration and the Master of Arts in Liberal Studies - with other programs under development.

**Continuing Studies**
Tel 778.782.5100, Fax 778.782.5098
Vice President Harbour Centre and Continuing Studies J.P. Blaney BEd, MEd (Br Col), EdD (Calif)
Associate Dean C. Yerbury, BEd, MA, PhD (S Fraser)
Director of Extension Credit Programs M. Selman BA, PhD (Br Col)
Harbour Centre Programs address advanced recurring educational needs of the urban core's business, professional and cultural communities through graduate degrees, post baccalaureate diplomas and selected certificate programs. Also offered are intensive, specialized short courses, seminars 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 completion of selected programs of credit-free study that have been approved by Senate and meet specific criteria, including a minimum of 120 contact hours and formal evaluation of students.

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 more detailed program information, or to enquire about "in-house" programs which can be developed for companies and organizations, refer to the Continuing Studies section of the Calendar, or call the Continuing Studies general office at 778.782.5100.

**Harbour Centre Research Institutes**

The following institutes and centres are based at the Harbour Centre campus and provide a conducive environment for research. Consult the Calendar Index to locate further details about these organizations.

- Canadian Centre for Studies in Publishing
- Canadian Institute for Advanced Research
- Community Economic Development Centre
- Gerontology Research Centre
- David See-Chai Lam Centre for International Communication
- Geraldine and Tong Louie Human Performance Centre
- Management of Technological Change
- Centre for North American Business Studies
- Centre for Policy Research on Science and Technology
- W.J. VanDusen BC Business Studies Institute

**Harbour Centre Services**

- Health Services
- Simon Fraser University Bookstore
- Statistical Consulting Service

**Enrollment 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:

The Registrar
Simon Fraser University
Burnaby, BC V5A 1S6
Canada
Simon Fraser University's History
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 the 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 and 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 1992 approximately 17,102 students were enrolled in courses. At the June 1993 Convocation ceremonies 2,051 degrees were conferred, while at the University's October Convocation, 1,026 students received their degrees.

In keeping with Simon Fraser University's commitment to accessibility, after ten years of planning and preparation a downtown Vancouver campus was opened on May 5, 1989 in the historic Spencer Building at 515 West Hastings Street. Programs at the Simon Fraser University at Harbour Centre campus focus on the advanced recurring educational needs of the urban populace.
### Governing Bodies

Expiry dates of terms of office are shown where applicable.

#### 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

<table>
<thead>
<tr>
<th>Position</th>
<th>Expiry Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chancellor</td>
<td>February 1997</td>
</tr>
<tr>
<td>President and Vice-Chancellor</td>
<td>January 1997</td>
</tr>
<tr>
<td>Registrar - Secretary</td>
<td>August 1996</td>
</tr>
<tr>
<td>Y. Cocke</td>
<td>January 1997</td>
</tr>
<tr>
<td>E. Kwok</td>
<td>January 1997</td>
</tr>
<tr>
<td>T. Nathoo</td>
<td>December 1996</td>
</tr>
<tr>
<td>B. Payne</td>
<td>December 1996</td>
</tr>
<tr>
<td>D. Shannon</td>
<td>December 1996</td>
</tr>
<tr>
<td>G. Stacey</td>
<td>December 1996</td>
</tr>
<tr>
<td>R. Welch</td>
<td>December 1996</td>
</tr>
<tr>
<td>(vacancy)</td>
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</tr>
</tbody>
</table>

- **Appointed by Order-in-Council**
- S. Djwa May 1996
- T. Calvert May 1996

- **Elected by Faculty Members**
- L. Hafer May 31, 1996
- W.S. Luk May 31, 1997

- **Elected by Students from the Students**
- K. Chan May 1996
- N. Bhatia May 1996

- **Elected by University Employees (excluding Faculty Members)**
- J. Reed May 1996

#### Senate

<table>
<thead>
<tr>
<th>Position</th>
<th>Expiry Date</th>
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<tr>
<td>Chancellor</td>
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<tr>
<td>President and Vice-Chancellor</td>
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<tr>
<td>Vice-President, Academic</td>
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<tr>
<td>Vice-President, Research and Dean of Graduate Studies</td>
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<tr>
<td>Vice-President, Harbour Centre and Continuing Studies</td>
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<tr>
<td>Associate Vice-President, Academic</td>
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<tr>
<td>Dean of Applied Sciences</td>
<td></td>
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<tr>
<td>Dean of the Faculty of Arts</td>
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<tr>
<td>Dean of the Faculty of Business Administration</td>
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<tr>
<td>Dean of the Faculty of Education</td>
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<tr>
<td>Dean of the Faculty of Science</td>
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<tr>
<td>Registrar - Secretary of Senate</td>
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<tr>
<td>Registrar - Secretary</td>
<td></td>
</tr>
<tr>
<td>University Librarian</td>
<td></td>
</tr>
</tbody>
</table>
- **Appointed by Order-In-Council**
- D. McInnes
- B. Naef
- B. Sanghera
- M. Warsh

- **Elected by the Faculties**
- Faculty of Applied Sciences
  - L. Hafer May 31, 1996
  - W.S. Luk May 31, 1997

- **Faculty of Arts**
- D. Ross May 31, 1998
- N. Swartz May 31, 1996

- **Faculty of Business Administration**
- L. Etherington May 31, 1997
- G. Mauser May 31, 1996

- **Faculty of Education**
- L. LeMare May 31, 1996
- P.H. Winne May 31, 1998

- **Faculty of Science**
- P. Percival May 31, 1996
- L. Peterson May 31, 1998
### Senate (cont.)

**Elected by Faculty Members Jointly**
- G. Blazenko May 31, 1998
- L. Boland May 31, 1997
- V. Dahl May 31, 1998
- C. Dean May 31, 1996
- C. Eaton May 31, 1996
- K. Heinrich May 31, 1996
- M. Howlett May 31, 1998
- R. Mathewes May 31, 1997
- A. Rawicz May 31, 1997
- C. Reed May 31, 1998
- M.L. Stewart May 31, 1996
- O. Underhill May 31, 1996
- M. Wideen May 31, 1996

**Elected by Convocation**
- S. Beattie May 31, 1996
- V. Dunsterville May 31, 1996
- I. McAskill May 31, 1996
- N. Wickstrom May 31, 1996

**Elected by Students**
- K. Arnason May 31, 1996
- D. Bullock May 31, 1996
- K. Chan May 31, 1996
- R. Dhir May 31, 1996
- K. Giffen May 31, 1996
- R. Jahn May 31, 1996
- F. Karabotsos May 31, 1996
- D. Keto May 31, 1996
- T. Lord May 31, 1996
- T. Morrison May 31, 1996
- E. Scharfe May 31, 1996
  (vacancy)

### Academic and Administrative Officials

**Visitor**
- The Honourable G. Gardom QC, BA, LLB (Br Col)
  Lieutenant-Governor of the Province of British Columbia

**Chancellor**
- J. Segal LLD (S Fraser), CM, OBC

**President and Vice-Chancellor**
- J.O. Stubbs BA (Tor), MSc (Lond), PhD (Oxf)

**Provost and Vice-President, Academic**
- (to be announced)

**Vice-President, Finance and Administration**
- R. Ward BSc (Lond), MBA (S Fraser), PhD (McM)

**Vice-President, Research / Dean of Graduate Studies**
- B.P. Clayman BS (Rensselaer), PhD (Cornell)

**Vice-President, Simon Fraser University at Harbour Centre and Continuing Studies**
- J.P. Blaney BEd, MEd (Br Col), EdD (Calif)

**Associate Vice-President, Academic**
- J.A. Osborne LLB (Edin), MA (Tor), LLM (Br Col)

**Executive Director, Simon Fraser University at Harbour Centre**
- W.G. Gill BA, MA, PhD (Br Col)

**Dean of Applied Sciences**
- R.G. Marteniuk BPE, MA (Alta), EdD (Calif)

**Dean of Arts**
- E.W. Alderson BA (Haverford), MA, PhD (Calif)

**Dean of Business Administration**
- S.J. Shapiro AB (Harv), MBA, PhD (Penn)

**Dean of Education**
- R. Barrow BA (Oxf), CertEd, PhD (Lond)

**Dean of Science**
- C.H.W. Jones BSc, PhD (Manc)

**Registrar**
- W.R. Heath BSA (Guelph)

**Special Assistant to the President / Executive Director, External Relations**
- G. Macdonald BA (Br Col), MA (S Fraser)
<table>
<thead>
<tr>
<th>Academic and Administrative Officials (cont.)</th>
<th>Academic and Administrative Officials (cont.)</th>
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<tbody>
<tr>
<td><strong>Director of Academic Planning Services</strong></td>
<td><strong>Director, Registrar Services, Simon Fraser University at Harbour Centre</strong></td>
</tr>
<tr>
<td>A. Watt BA (Hull)</td>
<td>D. Johnston BA (S Fraser), MA (Br Col)</td>
</tr>
<tr>
<td><strong>Director of Academic Relations</strong></td>
<td><strong>Director, Registrar Systems</strong></td>
</tr>
<tr>
<td>S. Cochran BA (Wash), MS (Ore), EdD (Br Col)</td>
<td>F. Larsen BSc (Br Col), MA (Educ), PhD (S Fraser)</td>
</tr>
<tr>
<td><strong>Director of Admissions</strong></td>
<td><strong>Director, Student Academic Resources</strong></td>
</tr>
<tr>
<td>N. Heath BA (Oxf), MA (S Fraser)</td>
<td>C. French BA (S Fraser)</td>
</tr>
<tr>
<td><strong>Director of Alumni Relations</strong></td>
<td><strong>Director of Student Services</strong></td>
</tr>
<tr>
<td>C. Liotta BA (Buffalo), MA, PhD (Tor)</td>
<td>W.A. Stewart BEd, MA (Alta), MBA (S Fraser)</td>
</tr>
<tr>
<td><strong>Director of Analytical Studies</strong></td>
<td><strong>University Archivist &amp; Information Privacy Co-ordinator</strong></td>
</tr>
<tr>
<td>W.J. Wattamaniuk BEng, MSc, PhD (Alta)</td>
<td>I. Forsyth BA (MC), MA (W. Laurier)</td>
</tr>
<tr>
<td><strong>Director of Athletics and Recreation</strong></td>
<td><strong>Library</strong></td>
</tr>
<tr>
<td>M. Dinning BA (Physical Ed), MA (Physical Ed) W Ont</td>
<td>T.C. Dobb BA, BLS (Br Col)</td>
</tr>
<tr>
<td><strong>Director of Centre for International Students</strong></td>
<td><strong>Associate Librarian</strong></td>
</tr>
<tr>
<td>K. Pearson</td>
<td>P.E. Baldwin BA (Nebraska), MLS (Calif), MBA (S Fraser)</td>
</tr>
<tr>
<td><strong>Director of Ceremonies</strong></td>
<td><strong>Head, Belzberg Branch</strong></td>
</tr>
<tr>
<td>M. Pankratz</td>
<td>K. Marotz BA (S Fraser), MLS (Br Col)</td>
</tr>
<tr>
<td><strong>Director of Academic Computing Services</strong></td>
<td><strong>Head, Collections Management Office</strong></td>
</tr>
<tr>
<td>L. Tolan</td>
<td>S.C. Thomas BA (Brandeis), MS (Col)</td>
</tr>
<tr>
<td><strong>Director of Counselling Services</strong></td>
<td><strong>Collections Librarians</strong></td>
</tr>
<tr>
<td>R. Steinberg BA (McG), MSc (St. Francis Coll), PhD (Sask)</td>
<td>E.E. Bridgwell Jr, BA (S Illinois), MALS (Immaculate Heart)</td>
</tr>
<tr>
<td><strong>Director of Childcare Services</strong></td>
<td>R. Stanton BA, MLS (Br Col)</td>
</tr>
<tr>
<td>S. Davidson</td>
<td><strong>Serials Librarian</strong></td>
</tr>
<tr>
<td><strong>Director of Facilities Management</strong></td>
<td>W.R. Taylor BA, MA, BLS (Br Col)</td>
</tr>
<tr>
<td>J.E.R. Johnson BSc (CE) (Manit), MBA (S Fraser), PEng</td>
<td><strong>Systems Manager</strong></td>
</tr>
<tr>
<td><strong>Director of Health Services</strong></td>
<td>L. Copeland BSc (Tor), MA (Brandeis), MLS (Col)</td>
</tr>
<tr>
<td>T.P. Harmon BSc, MD, MSc (Br Col)</td>
<td><strong>Operations Manager, Library Systems</strong></td>
</tr>
<tr>
<td><strong>Director of Human Resources</strong></td>
<td>N. Baldwin</td>
</tr>
<tr>
<td>W.A. Yule BA (Qu)</td>
<td><strong>Librarian Analyst</strong></td>
</tr>
<tr>
<td><strong>Director of Instructional Media Centre</strong></td>
<td>D. Binkley MA (Wat), MLS (W Ont)</td>
</tr>
<tr>
<td>T. Greenwood</td>
<td><strong>Head, Monographs Division</strong></td>
</tr>
<tr>
<td><strong>Director, Liaison and Awards</strong></td>
<td>M.L. Harris BA (W Ont), BLS (Br Col)</td>
</tr>
<tr>
<td>R.M. Smith BMgt (Leth)</td>
<td><strong>Senior Cataloguers</strong></td>
</tr>
<tr>
<td><strong>Director of Media and Public Relations</strong></td>
<td>D.D. Gordon BA (Acad), BLS (Br Col), MA (S Fraser)</td>
</tr>
<tr>
<td>K. Mennell BA (W Ont)</td>
<td>L. Polson BA (Br Col), MLS (MC)</td>
</tr>
<tr>
<td><strong>Director, Records and Registration</strong></td>
<td></td>
</tr>
<tr>
<td>D. Whiteley BA (Northeastern), MA (S Fraser)</td>
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</table>
Academic and Administrative Officials (cont.)

Head Reference Division
P.E. Groves BA (Wat), MLS (Br Col)

Reference Librarians
P.Y. Chan BA (HK), ALA (Great Britain)
J. Corse CA, MA (Edin), MLS (Br Col)
M.M. Deutsch BSc (CUNY), MLS (Pratt), MSc (Tor)
M.J. Finlayson BA, BLS (Br Col)
M. Nelles BSc (S Fraser), MLS (Br Col)
W.G. Piovesan BA (S Fraser), MLS (Br Col)
T. Power BA (S Fraser), MLS (Br Col)
E. Szabo BSc (Northwestern), BLS (McG), MLS (Br Col)
G.N. Tesch BA (Manit), BLS (Tor)
H. Tingley BA, BLS (Br Col)
C. Goldsmith BA, MLS (Br Col)
A.K. Zielinski MA (Warsaw), MLS (Tor)

Inter-Library Loans Librarian
E. Fairey BA (Br Col), MA Br Col, MLS (Tor)

Librarians, Belzberg Branch
M. McIntosh BA (Calg), MLS (Alta)
N. Smart BA (McG), MLS (Br Col)

Excellence in Teaching Awards

1982 - P.E. Kennedy Economics; A. Lebowitz English; T.J. O'Shea Education

1983 - M.J. Gresser Chemistry; L.M. Prock Education

1984 - R. Coe English; I. Gordon Business Administration; K. Silverman Centre for the Arts

1985 - R.H. Dunham English; K.N. Slessor Chemistry

1986 - A. Aberbach History; R. Mathewes Biological Sciences; R. Menzies Criminology

1987 - F. Fisher Biological Sciences; T. Kirschner Languages, Literatures, and Linguistics; R. Koepke History

1988 - A. Harestad Biological Sciences; N. Robinson Education; S. Wasserman Education

1989 - N. Dyck Sociology and Anthropology; D. Krebs Psychology; R. Pomeroy Chemistry

1990 - C.I. Dyck History; T. Grieve English; R. Peterman Resource and Environmental Management

1991 - C. Banerjee English; R. Schwindt Economics; M. Wexler Business Administration

1992 - L. Boland Economics; M. Gates Sociology and Anthropology; S. Wendell Women's Studies

1993 - G. Gries Biological Sciences; M. Manley-Casimir Education; Derek Sutton Chemistry

1994 - J. Dahn Physics; A. MacKinnon Education; J. Sturrock English
Endowed and Sponsored Chairs and Professors

Endowed Chairs and Professors

BC Telephone Endowed University Professor
R.G. Harris, Economics

Ebeo-Epic Chair in Expert Systems
(appointment pending)

Endowed University Professor
S. Wolfe, Chemistry

Jack and Nancy Farley Endowed University Professor
J. Parr, History

Gordon M. Shrum Endowed Chair
J. Borwein, Mathematics and Statistics

Ming and Stella Wong Endowed Chair in International Business
R.L. Tung, Business Administration

J.S. Woodsworth Chair
A.J. Whitehorn, Humanities

Ruth Wynn Woodward Endowed Chair
V. Dhruvarajan, Women's Studies

Jennifer Allen Simons Chairs in Liberal Studies
P. von Morstein, Liberal Studies

Sponsored Chairs and Professors

Alcan / Canadian Institute for Advanced Research Fellow
R. Lipsey, Economics

MPR Teltech NSERC Industrial Chair in Software Systems
H. Ait-Kaci, Computing Science

NSERC / Canadian Wildlife Service Industrial Research Chair in Wildlife Ecology
F. Cooke, Biological Sciences

NSERC Industrial Research Chair in Chemical Ecology and Management of Forest Insect Pests
J. Borden, Biological Sciences

NSERC Industrial Research Chair in the Optical Properties and Characterization of Electronic and Optoelectronic Materials
M. Thewalt, Physics

NSERC / SSRHC / BNR / BC Telephone Chair in the Management of Technology
P. Guild, Communication
### Faculty

#### Professors Emeriti

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#### Faculty

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<td>Blackman, A.R. - Psychology</td>
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<td>Blaney, J. - Education/Vice President, Simon Fraser University at Harbour Centre and Continuing Studies</td>
<td>Cleveland, W.L. - History</td>
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Gutstein, D. - Communication
Gygax, S. - Physics
Hackett, R.A. - Communication
Hadley, R.F. - Computing Science
Hafer, L. - Computing Science
Hahn, M. - Philosophy
Haig Brown, C. - Education
Hamm, C.M. - Education
Hammerly, H. - Linguistics
Han, J. - Computing Science
Hanlan, A.J.L. - Chemistry
Hanson, P.P. - Philosophy
Harasim, L.M. - Communication
Hardy, R.H.S. - Engineering Science
Harestad, A.S. - Biological Sciences/Pest Management
Harris, M.D. - English
Harris, R.G. - Economics
Hart, S. - Psychology
Hartwick, E.B. - Aquaculture/Biological Sciences
Hauser, O.F. - Physics
Havens, W.S. - Computing Science/Engineering Science
Havlovic, S.J. - Business Administration
Hayden, B.D. - Archaeology
Hayes, M.V. - Geography
Hayter, R. - Geography
Heaney, J.W. - Business Administration
Heaps, T.M. - Economics
Heard, A. - Political Science
Hebron, J.S. - Mathematics and Statistics
Hedberg, N. - Linguistics
Hegland, B. - Contemporary Arts
Heinrich, B. - Physics
Heinrich, K. - Mathematics and Statistics
Heit, M.L. - Chemistry
Hell, P. - Computing Science/Mathematics and Statistics
Herzog, J.P. - Business Administration/Economics
Heyer, P. - Communication/Publishing
Hickin, E.J. - Earth Sciences/Geography
Hill, R.H. - Chemistry
Hindley, M.P. - Communication
Ho, P.K.M. - Engineering Science
Hobler, P.M. - Archaeology
Hobson, R.F. - Computing Science
Hoffer, J.A. - Kinesiology
Holdcroft, S. - Chemistry
Holmes, R.A. - Business Administration/Economics
Honda, B.M. - Biological Sciences
Horban, P.T. - Philosophy
Horsfall, R.B. - Geography
Horvath, A. - Education
Howard, M. - Sociology and Anthropology
Howard, P.M. - Communication
Howlett, M. - Political Science
Hsieh, J.C. - Business Administration
Hungerford, A. - English

Faculty (cont.)
Huntley, D.J. - Archaeology/Physics
Hutchinson, I. - Geography
Hutchinson, J.F. - History
Ingram, E.R. - History
Irwin, J.C. - Physics
Jaccard, M. - Resource and Environmental Management
Jackson, M.A. - Criminology
Jackson, M.B. - Interdisciplinary Studies
Jennings, R.E. - Philosophy
Johnston, H.J.M. - History
Jones, C.H.W. - Chemistry/Dean of Science
Jones, C.V. - Business Administration
Jones, I.L. - Biological Sciences
Jones, J.D. - Engineering Science
Jones, R.A. - Economics
Kameda, T. - Computing Science
Kamstra, M. - Economics
Kanevsky, L. - Education
Kawasaki, T. - Interdisciplinary Studies/Political Science
Kazepides, A.C. - Education
Kemp, C.L. - Biological Sciences
Kennedy, C.J. - Biological Sciences
Kennedy, P.E. - Economics
Kenny, M. - Sociology and Anthropology
Kerrig, P.K. - Psychology
Kernode, A.R. - Biological Sciences
Khan, M.H. - Economics
Kiehlmann, E. - Chemistry
Kimball, M. - Psychology/Women's Studies
Kirchenow, G. - Physics
Kirschner, T.J. - Spanish and Latin American Studies
Kitchen, J.M. - History
Kitching, L.P. - Interdisciplinary Studies
Kline, S. - Communication
Knetzch, J.L. - Economics/Resource and Environmental Management
Koepeke, J.E. - Psychology
Koepeke, R.L. - History
Komorous, R. - Contemporary Arts
Koopman, R.F. - Psychology
Koroscil, P.M. - Geography
Korteling, R.G. - Chemistry
Krane, W.R. - Psychology/Associate Dean of Arts
Kreb, D.L. - Psychology
Krishnamurti, R. - Computing Science
Kristjanson, E. - Education
Kropinski, M.C.A. - Applied and Computational Mathematics/Mathematics and Statistics
Lab, M. - Communication
Lachlan, A.H. - Mathematics and Statistics
Lacombe, D. - Criminology/Anthropology
Lank, D.B. - Biological Sciences
LaRocque, L. - Education
Law, F.C.P. - Biological Sciences
Laycock, D. - Political Science
Leach, G.W. - Chemistry
Lebowitz, A. - English/Associate Dean of Arts
Lebowitz, M.A. - Economics
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<td>Tibbits, G.F. - Kinesiology</td>
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<tr>
<td>Scott, J. - Chemistry</td>
<td>Tietz, J.H. - Philosophy</td>
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<td>Faculty (cont.)</td>
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<tr>
<td>Tjosvold, D.W. - Business Administration</td>
<td>Welsby, C. - Contemporary Arts</td>
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<td>Todd, D.D. - Philosophy</td>
<td>Wendell, S. - Women's Studies</td>
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<td>Whitmore, S. - Engineering Science</td>
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<td>Whittworth, J.M. - Sociology and Anthropology</td>
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<td>Wiebe, L.G. - Education</td>
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<td>Williams, P.W. - Resource and Environmental Management</td>
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<td>Winne, P.H. - Education</td>
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<td>Valiquette, M. - English</td>
<td>Winston, M.L. - Biological Sciences/Pest Management</td>
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<td>Vanderwerff, J. - Mathematics and Statistics</td>
<td>Winton, I. - Geography</td>
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<td>Vanderzande, K.E. - Business Administration</td>
<td>Wister, A.V. - Gerontology</td>
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<td>Verbeek, N.A.M. - Biological Sciences</td>
<td>Wolfe, S. - Chemistry</td>
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<td>Wyckham, R.G. - Business Administration</td>
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<td>Ydenburg, R.C. - Biological Sciences</td>
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<td>Webster, J.M. - Biological Sciences/Pest Management</td>
<td>Yim, A. - Chemistry</td>
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<td>Wedley, W.C. - Business Administration</td>
<td>Yoon, J. - Contemporary Arts</td>
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<tr>
<td>Weeks, D. - Kinesiology</td>
<td>Yu, T. - Humanities/Interdisciplinary Studies</td>
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<td>Weinberg, H. - Kinesiology</td>
<td>Zaichkowsky, J.L. - Business Administration</td>
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<td>Weinink, J.J. - Computing Science</td>
<td>Zapf, D. - Contemporary Arts</td>
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<td>Weldon, K.L. - Mathematics and Statistics</td>
<td>Zaslove, J. - English/Humanities</td>
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<td>Wells, E.J. - Chemistry</td>
<td>Zazkis, R. - Education</td>
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<td>Zimmerman, D. - Philosophy</td>
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<td>Zola, M. - Education</td>
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**Glossary**

**academic discipline**
refers to any sanction imposed by the University for acts judged to be intellectually dishonest, including such things as cheating on exams, plagiarism, falsifying laboratory results, etc.

**academic sanction**
the penalty imposed by the University for intellectual dishonesty. Penalties may include a warning, reassessment of the work, failure on the particular assignment or in the course, etc.

**approved**
a status that identifies a student who has been granted admission to a particular program or area of specialization (e.g., to a major in English)

**assigned credit**
transfer credit granted for a course with an SFU equivalent
audit
an official category by which a student is allowed to register in a credit course and attend lectures but may not be required to write the final examination and does not receive a grade or credit

award
money, medals or other prizes given in recognition of some distinguished intellectual, cultural, social or athletic contribution to University life

bursary
a non-repayable grant made to students who have proven financial need and who hold a satisfactory academic record

certificate program
certificate programs offer an opportunity to "specialize" in areas of study and to earn recognition for that study prior to or without completing an undergraduate degree. For instance, students working on Bachelor of Arts degrees often complete a Certificate in Liberal Studies along the way.

CGPA, Cumulative Grade Point Average
Expresses performance as a numerical average for all semesters completed and is calculated by dividing the total number of grade points earned to date by the total number of normally graded semester hours.

convocation
literally, a gathering or calling together. The ceremony at which degrees are conferred upon all students who both are eligible and have applied to graduate.

co-operative education
a program allowing students to alternate semesters of academic study with semesters of work related to their areas of study.

corequisite
a course required to be taken in the same semester as another.

course challenge
a method by which a student may obtain credit for course material learned elsewhere. No more than 60 semester hours of credit may be obtained by the combination of course challenge and transfer credit.

course load
the number of semester credit hours a student either is enrolled in or can enroll in. With a few exceptions, undergraduate students require special permission to carry more than 16 credit hours in any given semester.

credit
a way of calculating progress toward a degree, certificate or diploma.

department/school
an academic unit responsible for teaching a subject.

distance education courses
courses taken by correspondence.

drop period
the period each semester during which courses may be dropped without academic penalty.

Faculty
an academic unit made up of similar teaching departments or schools. Simon Fraser University has five Faculties: Applied Sciences, Arts, Business, Education and Science. "Small-f" faculty refers to teaching staff, as in "Professor Smith is a faculty member."
general elective credit
transfer credit granted for courses which count toward the total number of hours required for the degree, but which do not fulfill specific faculty or departmental requirements (other than Faculty of Arts or Business Administration group requirements).

graduate student
a student working toward either a Masters or Doctoral degree.

enrollment limits
when the number of qualified applicants exceeds, in the judgement of the University, the number of students who can be accommodated, the University reserves the right to select the quota from among the qualified applicants. Some academic programs within the University also have enrollment limits.

exchange program
the University has a number of reciprocal agreements with other universities that allow students from SFU to study there, or permit students from these to study at Simon Fraser University.

grade points
a way of numerically expressing a student's academic performance. Numerical values are assigned to each possible grade.

grade point average
the value of all grade points divided by the number of normally graded credit hours. Grades without a numerical equivalent (e.g., P, AU) are not included in calculating a grade point average.

harassment
aggressive or threatening behaviour which would be considered by a reasonable person to create an environment unconducive to work or study.

honors
A program that offers an opportunity to pursue a field of study more intensively than does a major.

intellectual dishonesty
examples are plagiarism, cheating or helping others to cheat on exams, submitting essays prepared by others, falsification of lab results, impersonating another student at an exam and the misrepresentation of information on, and the falsification of, academic records.

lab
the practical section of an applied course involving experimental research.

lecture
usually, the larger class part of a course, as opposed to a tutorial, and which usually meets for two or more hours a week and is led by a professor.

letter of permission
a letter granting permission for a Simon Fraser University student to take a course at another university for credit toward an SFU credential, or vice versa.

major
the subject area in which a student concentrates within a degree program, e.g., a Bachelor of Science with a major in Chemistry

minor
usually, a subject area that is the secondary focus of a degree, e.g., a Bachelor of Arts with a major in History and a minor in Philosophy.

plagiarism
the unacknowledged submission of the ideas or the published material of another or others as one's own.
prerequisite
a requirement that must be met in order to register in another course.

registration
the process of formally assigning and recording the enrollment of a student in a course or courses. Except for Special Audit students, a person must be admitted to the University in order to register in courses.

registration priority number (RPN)
A number calculated using a student's cumulative grade point average and the number of hours completed and in progress; it establishes the earliest date at which a student becomes eligible to register in courses. The higher the RPN, the earlier the student may register.

scholarship
a non-repayable cash payment made to students in recognition of outstanding academic achievement.

semester
in a calendar year, any one of three academic terms of sixteen weeks each. The semester from May through August is also subdivided into two smaller units, Intersession and Summer session.

SGPA
Semester Grade Point Average. The grade point average calculated for any given semester by itself.

subject
a body of knowledge with arbitrary boundaries (e.g., Physics, History). Also referred to as a "discipline."

timetable
the printed list of available courses (and their examinations) distributed to all students eligible to register in a semester.

TOEFL
The Test of Written English as a Foreign Language.

transcript
an official statement of grades for all courses taken at the university, which includes notice of any and all degrees, certificates and diplomas earned here.

transfer credit
credits granted on the basis of work done at another recognized institution.

tutorial
the "small group" discussion portion of a larger lecture class, usually an hour in length.

UDGPA
Upper Division Grade Point Average: calculated by dividing the total number of grade points earned in upper division courses (i.e., courses numbered 300 or higher) by the total number of semester credit hours assigned for those courses, counting only the higher grade in duplicate courses.

unassigned credit
transfer credit granted for courses without a direct Simon Fraser University equivalent but which clearly fall within a discipline and which may, therefore, be used to fulfill subject requirements for a degree in that discipline.

undecided student
a status describing a student who has not recorded an area of intended specialization or has not yet been granted approval or conditional approval to enter an area of specialization and who has completed at least 61 credit hours.
undeclared student
a status describing a student who has a) not recorded an area of intended specialization or has not yet been granted approval or conditional approval to enter an area of specialization; and b) has not yet successfully completed 61 or more credit hours.

undergraduate student
any student not registered as a graduate student; for example, anyone seeking a Bachelors degree, or a certificate or diploma.

unofficial statement of grades
a printed record of a student's academic performance mailed to each student at the end of each registered semester. It is "unofficial" in that it is not intended to be used, as an official transcript is, to verify the student's academic record to employers or other academic institutions.

visiting student
a student from another institution who is permitted to take courses for credit only toward a degree, certificate or diploma at the "home" institution.

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 printing of the Calendar. Revisions include additions, cancellations and deletions as well as changes.

Protection of Privacy
Simon Fraser University collects and maintains information used for the purposes of admission, registration and other activities directly related to its education programs, being a member of the Simon Fraser University community, including its alumni, and attending a public post-secondary institution in the Province of British Columbia.

Information on admission, registration and academic achievement may also be used for statistical and research purposes at the institutional level and, at the provincial level, through the BC Educational Records Linkage File (Link File). The personal records in the Link File are not identifiable and are not used for other administrative purposes.

In signing 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).

Calendar Production
Published by the Office of the Registrar.
Editor: K.C. Bell BA (Vic, BC), MA (Tor)
Editorial Assistant: S. Walter, Registrar Publications
Printer: Broadway Printers
Undergraduate Studies

**General Information**
Academic Resource Office, programs of study, declaration of major/minor/areas of specialization, graduation requirements, Convocation, definitions, academic year, courses, study abroad, Co-op work placements, fee reciprocity agreements, and letters of permission.

**Admission and Readmission**
Applicants from British Columbia, other Canadian Provinces, other countries, English language requirements, readmission/re-registration, protection of privacy, retention of documents

**Registration**
Course loads and overloads, duplication of courses, courses at other institutions, duplicate transfer credit, course challenge, course audit, medical requirements, program/course changes and withdrawals, identity/library cards, student responsibility, and class interruption

**General Regulations**
Examinations, grades, credit for the semester, standing required for continuance, and student appeals

**Fees**
Tuition fee schedule, payment of fees, cancellation of registration, refunds, overdue accounts, graduation fee, and award of certificate or diploma fee.

**Financial Assistance and Awards**
University administered programs, externally administered programs, and government administered programs

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**General Information**

**Academic Resource Office**
Location: P9310 Shrum Science Centre
Hours: 9 am - 7:30 pm Monday to Thursday, 9 am - 4:30 pm Friday
Telephone: 778.782.4356

The Academic Resource Office (ARO) assists undergraduate students by providing diverse academic administrative services.

**Academic Advising**
The ARO provides academic advice to students who have not declared a specialization. For details about specializations, a general term used to describe an honors program, major, minor or double major, see below.

Advising assistants representing the Faculties of Applied Sciences, Arts, Business Administration, Education and Science are available to assist students in determining which academic programs may be suited to their individual needs and goals.

Special advisors are available for students experiencing difficulties with their studies. Students with concerns regarding Academic Probation or Required to Withdraw status are encouraged to contact a special advisor, who may be able to provide assistance to overcome academic difficulties.
**Academic Records, Registration and Administrative Services**

Through its affiliation with the Office of the Registrar, the ARO also provides students with various other administrative services related to academics, including the following.

<table>
<thead>
<tr>
<th>Student documents</th>
<th>Changes to personal student data</th>
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<tr>
<td>• official and unofficial transcripts of academic record</td>
<td>• changes of address and/or telephone numbers</td>
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<tr>
<td>• letters of confirmation of registration</td>
<td>• changes to names</td>
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<tr>
<td>• letters of permission to take courses at another institution</td>
<td>• changes to immigration status</td>
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<td>• ID/Library cards</td>
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</table>

Students are invited to make an appointment with an advisor either for general advice regarding University studies or for advice specific to a particular program or faculty. In addition, administrative services and general information related to registration and academic records are provided on a drop-in basis.

Course outlines for lower division courses (all credit courses numbered 001 to 299) and for all evening courses are available for pick up.

**Programs of Study**

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 of 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 semester hours in lower and upper division courses to be taken 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 studies for their programs that they may need to undertake in the first four levels. (See the Definitions section following.)

**Honors Program**

An honors degree requires completion of at least 132 semester hours of credit and completion of an honors program. An honors program requires completion of approximately 48-50 semester hours of credit in specified upper division courses in the honors subject or field, normally taken in the upper levels. Different honors programs have varying semester hour requirements in the lower division courses. (See faculty and departmental requirements.)

**Joint Honors Program**

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

**Major Program**

A general degree requires completion of at least 120 semester hours of credit and, normally, completion of a major program. A major program requires approximately 28 to 30 semester hours of credit in upper division courses as specified in the major subject or field. Varying semester hour 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 on 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 semester hours of credit and completion of a joint major program. The specific joint major requires at least 30 semester hours of credit in upper division courses taken in two or more disciplines, as specified. Semester hour 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 hours 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 for two majors within a single faculty or across faculties. The Bachelors degree awarded will be determined according to the faculty for which all requirements have been met or, if the requirements of more than one faculty have been met, then from which one of the faculties the student selects. (See Major-Minor Program following.)

**Minor Program**
A minor requires completion of at least 14 to 18 semester hours credit in upper division courses as specified in the subject concerned. To qualify for a specific minor, at least 7 semester hours of the upper division credit used toward the minor must have been completed through University courses. A minor program also requires meeting any stipulated lower division requirements and may be used toward meeting the requirements of a degree program.

**Extended Minor Program**
An extended general minor 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 of a minor program. The student must complete at least 28 hours of upper division courses as specified in the major subject and at least 14 to 18 hours 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 of 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 fulfills the content requirements of two related areas, additional replacement credits in upper division work satisfactory to one of the departments or program committees must be taken in order to fulfill the overall credit requirements for the double major or major-minor program.

For lower division requirements, one course could fulfill both content and credit requirements as a prerequisite, but no course can carry double credit value toward the total needed for a degree. In a number of combinations possible in the Bachelor of Arts or Bachelor of General Studies degree, certain constraints exist on the use of both lower and upper division courses.
Degree Requirements
Students are cautioned to refer carefully to overall requirements of the faculties for degree requirements, as the requirements for a specific degree must be fulfilled. If in doubt, seek advice from the Academic Resource Office. 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 taken in the upper levels of study to fulfill degree conditions. Some faculties require completion of a minimum number of credits within the faculty to qualify for a degree. 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 semester hours to fulfill the requirements of the general degree.

Changing Programs
A student who elected to take a double major or a major-minor program may change his/her decision and graduate with a major only, provided that the normal 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 the Office of the Registrar.

Second Bachelors Degrees
A student who already holds a Bachelors degree (or degrees) may complete a second or subsequent Bachelors degree at the University, subject to the following conditions and regulations.

Normal admission policies apply to all applicants for further Bachelors degrees. First Bachelors degrees from certain jurisdictions may qualify the applicant to proceed to a first Bachelors degree only. For more information, please contact the Admissions Office, Office of the Registrar. The basic requirement for any further degree shall not be less than 60 semester hours of credit for a general degree, and not less than 72 semester hours of credit for an honors degree.

Of the minimum 60 semester hours required for a further general degree, not less than 44-45 semester hours must be upper division credit. Of the minimum 72 semester hours required for a further honors degree, not less than 60 semester hours must be upper division credit.

The department or program in which the further degree is being taken has the right to require completion of prerequisite lower division courses in addition to the minimum conditions specified above.

General University regulations covering a first Bachelors degree apply to further Bachelors degrees unless otherwise stated or clearly implied. These include, but are not limited to:

- minimum CGPA and minimum GPA calculated on the basis of all upper division courses taken at Simon Fraser University required for graduation
- maximum number of transfer credit hours that may be counted toward minor/major/honors programs

General faculty and departmental regulations apply, including completion of any group requirements not completed in a previous degree.

A student may not enroll in a further Bachelors 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 enroll 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 the further Bachelor's degree. However, recognition may be given for the content of such previous work. In such cases, students will be required to obtain credit in appropriate courses in lieu of those for which exemption or advance standing has been granted.

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 semester hours). Semester hours of credits applied to one diploma may not be applied to another Simon Fraser University certificate, diploma or degree, and vice versa. 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.
Certificate Program
A certificate program should consist mainly of regular lower division courses. Upper division courses may be included. The study program should be the equivalent of between one-half and one full year of university study (18 to 30 semester hours). See the Continuing Studies Office for further information regarding individual certificate programs. Credits applied to one certificate may be applied also to major programs or minor programs or to a Bachelor's degree under the normal regulations governing these programs, but may not be applied to another Simon Fraser University certificate or diploma.

Co-operative Education
A co-operative education program consists of four or five work terms to be completed while doing regular academic terms. See Co-operative Education.

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 credits. "Specialization" is an umbrella term used to cover programs such as majors, minors, double majors, honors, minors, etc., and "department" refers to the Faculty or department or school or unit responsible for a program. There are some other programs (e.g., Post Baccalaureate Diplomas, Certificates) which may have some additional instruction regarding procedure since the students in these programs fall outside the usual flow of credit hours.

With regard to the area of specialization, students will be classified according to the following categories: Undecided, Intended, Conditionally Approved, Approved or Undeclared.

Undeclared
This category will be used for any student who, prior to the successful completion of the 61st credit hour, has not recorded an intended specialization or who has not been granted conditionally approved or approved entry to a specialization. "Undeclared" will not be recorded for any student who has successfully completed 61 or more credit hours.

Academic advising for undeclared students is the responsibility of the Academic Resource Office.

Intended
This category identifies the specialization(s) the student aspires to enter later in his/her studies at this University. This declaration may be made at the discretion of the student up to the 60th successfully completed credit hour but, at the discretion of the department responsible for the specialization, a student may be removed from this designation. A student so removed would require approval from the department to reinstate the "intended" designation. Intended specialization(s) will not be recorded for any student who has successfully completed 61 or more credit hours.

Academic advising for intended students is the responsibility of the department offering the particular specialization(s).

Conditionally Approved
This category identifies a student who will be approved for entry to a specialization upon satisfactory completion of some stated condition(s). Use of this category is at the discretion of a department and will usually be limited to those cases where the student has very limited deficiencies and is taking immediate action to remove them. In granting conditional approval, the department or signing authority will set out to the student, in writing, the condition(s) that must be satisfied for approved entry to the specialization. Students who satisfy the condition(s) will be advised that they have been approved for entry to the specialization. Students who have tried unsuccessfully to complete the condition(s) may be advised that their conditional approval has been withdrawn, or, at the discretion of the academic department, the student may be conditionally approved for an additional semester (or semesters).

Academic advising for conditionally approved students is the responsibility of the department offering the particular specialization(s).

Approved
This category identifies the specialization of a student who has been formally approved by the department or signing authority for that specialization and may be granted at the discretion of a department or signing authority.

Academic advising for approved students is the responsibility of the department offering the approved specialization(s).
Undecided
This category will be automatically recorded for any student who, upon the successful completion of the 61st (or higher) credit hour, has neither an approved nor conditionally approved specialization. A student who transfers to the University and in the first semester exceeds 61 credit hours may have one semester to obtain approved or conditionally approved status. At the discretion of a Faculty, option A or option B will be applied to resolve the student's status.

Option A
In the event that undecided status is applied to a student's record (i.e. there is no approved or conditionally approved program recorded), all references to degree/diploma objectives and Faculty affiliation will be removed from the student's record.

Academic advising for undecided students so designated under option A is the responsibility of the Academic Resource Office, but undecided students will be encouraged to approach directly a department, to discuss requirements for conditional or approved entry to a program or specialization.

Option B
In the event that undecided status is applied to a student's record (i.e. there is no approved or conditionally approved program recorded) the existing degree/diploma objectives and Faculty affiliation will be retained but the student will be required to discuss his/her program objectives with the appropriate Faculty Advisor before further registrations are permitted with this status. The Faculty Advisor may allow the student to proceed with undecided status. If, in the opinion of the Faculty Advisor, the student's program objectives are unacceptable or unrealistic, the Faculty Advisor may have the degree/diploma objectives and Faculty affiliation removed from the student's record, and the student may be referred to the Academic Resource Office for further advising.

Academic advising for undecided students designated under option B with degree/diploma objectives and Faculty affiliation is the responsibility of the appropriate Faculty Advisor. Academic Advising for undecided students with no degree/diploma objectives or Faculty affiliation is the responsibility of the Academic Resource Office.

Graduation Requirements
Each candidate for a degree, certificate or diploma must formally apply to graduate. Details on how to initiate the graduation process are contained in the Course Timetable and Registration Instructions published each semester. (See also the requirements as noted in the individual faculty sections.)

General Degree
For students enrolled at the University before Fall 1991, the minimum requirement for graduation in a general degree program is a graduation grade point average of 2.00 calculated on the entire required 120 semester hours used for degree credit, or on the 60 semester hours of the final four levels for courses used for degree credit, including the normal 45 semester hours in upper division courses. The average is computed by dividing the total number of grade points earned by the total number of semester hours assigned for those courses, excluding duplicate courses. A grade point average of not less than 2.00 is required in courses comprising the major studies.

The minimum requirements for graduation changed for students who enrolled at the University beginning in Fall 1991 or thereafter. These students must achieve both a minimum cumulative grade point average (CGPA) of 2.00 and a minimum grade point average (GPA) of 2.00 calculated on all upper division courses. This grade point average is calculated by dividing the total number of grade points earned in upper division courses by the total number of semester credit hours assigned for those courses, counting only the higher grade in courses that have been duplicated.

Individual faculties and departments may, with Senate approval, maintain their own supplementary graduation requirements; therefore, students are advised to check individual faculty and departmental listings in case these have a higher minimum GPA or other additional requirements for graduation.

Honors Degree
For students enrolled in the University before Fall 1991, the minimum requirement for graduation in an honors degree program is a graduation grade point average of 3.00. If the graduation grade point average is 3.50 or higher, the designation "First Class" will apply. The average is calculated on the entire required 132 semester hours in courses passed and used for credit toward the
degree, or on the required final 60 semester hours of 300 and 400 division courses taken and used for credit toward the degree, with the exception of duplicate courses.

The minimum requirement for graduation in an honors degree program changed for students who enrolled in the University beginning in Fall 1991 or thereafter. These students must achieve both a minimum CGPA of 3.00 and a minimum GPA of 3.00 calculated on all upper division courses taken at the University. This grade point average is calculated by dividing the total number of grade points earned in upper division courses by the total number of semester credit hours assigned for those courses, counting only the higher grade in courses that have been duplicated. If a student has both an upper division CGPA and GPA of 3.50 or higher, the designation "First Class" applies.

Individual faculties and departments may, with Senate approval, maintain their own supplementary graduation requirements; therefore, students are advised to check individual faculty and departmental listings in case these have a higher minimum GPA or other additional requirements for graduation.

Convocation
Convocation is held twice annually, in June and October. Students who fulfill their degree requirements during the Fall or Spring semesters may attend the June ceremony. Graduates of the Summer semester convocate in October.

Application for Graduation/Granting of Degree, Certificate or Diploma
Each candidate for a degree, certificate, diploma, or co-operative education must formally apply for graduation. Details on how to initiate the graduation process are contained in the Course Timetable and Registration Instructions published each semester. See the Academic Calendar of Events for deadlines to apply for or to cancel applications to graduate.

Notification of Award by Senate
Following approval by Senate, each student who has been awarded a degree or certificate or diploma will receive a letter of confirmation from the Registrar.

Convocation Procedure
In April, an information package will be sent to each graduand who has been awarded a degree by Senate in the previous Fall semester, or who has applied for graduation in the current Spring semester. Graduands who apply for graduation in the Summer semester will be sent information in late August.

Definitions

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. For further information, see the Financial Aid and Awards section.

Qualifying Student
See the Graduate General Regulations section.

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 admission to the University under the general admission regulations but who wish to audit credit courses may be given entry as Special Audit Students. Special application procedures apply; complete information is given in the Continuing Studies section.

Special Student
A student already holding a first degree may undertake undergraduate courses as a Special Student subject to the condition that credit for these courses may not be applied toward completion of a degree, certificate or diploma program at Simon Fraser University. First-time applicants wishing to enroll as Special Students and students holding a first degree who have previously attended Simon Fraser University should refer to the Admission and Readmission section.
Visiting and Exchange Students
A Visiting Student is one who, as a bona fide student of another accredited institution, is permitted to take courses for credit only toward a degree, certificate or diploma at the home institution. Applicants who wish to become Visiting Students must meet all requirements for regular admission. In addition, students must submit a letter of permission from the Registrar of the home institution. A Visiting Student wishing to become a Regular Student at Simon Fraser University must re-apply and meet any admission requirements in effect at that time.

Academic Year

Trimester
Simon Fraser University offers three full regular semesters of study within the twelve month calendar year.

Semester
The calendar year is divided into three academic terms of sixteen weeks each, called "semesters." Each semester has its own registration and final examinations. All academic courses in this Calendar are one semester long or fall into one of the shorter sessions, such as Intersession or Summer session. Students may enter at the beginning of any semester and attend one, two or three semesters within a calendar year. By attending continuously, it is possible for a student who enters from BC High School Grade 12 (or equivalent) into the Fall 1993 semester to graduate with a Bachelor's degree at the end of the Spring 1996 semester. Semesters are referred to by numbers or by names:

Example 1993

Semester 1 Spring January to April Spring 1993 (93-1)
Semester 2 Summer May to August Summer 1993 (93-3)
Semester 3 Fall September to December Fall 1993 (93-3)

To increase the accessibility of the Summer program (May-August) to teachers and other members of the community, the Summer semester has been enriched by two, two-month sessions, namely Intersession (May-June) and Summer session (July-August). These programs are offered in addition to the regular four month Summer semester.

The following illustrates an academic year at the University.

September - December (Fall semester)
January - April (Spring semester)
May - August (Summer semester)
May - June (Intersession)
July - August (Summer session)

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 terms of levels. "Level" refers to the status of a student's program. Each level would normally equal one semester's work with a full course load; a typical four year Bachelor's degree program consists of 8 levels. The first 4 (i.e., the first 60 semester hours of credit) are lower levels. Levels 5 and above are upper levels. The term "level" is not used for graduate programs.

Usually students in levels 1 and 2 take 100 series courses; those in levels 3 and 4 take 200 series courses; those beyond level 4 take 300 and 400 series courses.
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 is a requirement needed to register in another course.

Corequisite
A corequisite is a course to be taken 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 taken in the lower levels and lower division courses in the upper levels. Refer to specific regulations pertaining to requirements for degrees, certificates or diplomas.

Numbering of Courses
Each subject is divided into courses usually designed to be offered in semester-length units, e.g., GEOG 212-3, Geography of Natural Hazards. Each course is identified by a subject name followed by a course number, the number of semester hours of credit, and the course title, e.g. ENGL 103-3, Introduction to Drama. The first course number digit represents the level of the course; the fourth digit indicates the semester hours of credit. For example, ENGL 103-3 is a first level course offering 3 semester hours of credit.

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 semester hours of credit and count toward the total required for a degree, certificate or diploma, subject to the regulations governing the credential.

Semester Hours of Credit
Semester hours are assigned to each course; most courses have 3 semester hours. A normal course load for a student in full attendance in a semester is 15 semester hours. Semester hours are also called credit hours, credits, hours or semester hours of credit. Requirements for credentials (e.g., degrees, diplomas and certificates) are partially expressed as semester hours of credit.

The semester hour weight is shown for each course as follows.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course Number</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics (MATH)</td>
<td>232</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit-Free Courses
These courses carry no credit and do not count toward a degree, certificate or diploma. At times, they have been termed "non-credit courses."

Distance Education Courses
Certain courses may be taken as correspondence (Distance Education) courses. The program parallels the campus semester system of the University, with the same sixteen week period for course completion.
Study Abroad
For information on international study opportunities, contact the office co-ordinator of International Education at 778.782.5460.

Simon Fraser University transfer credit can be obtained from many overseas institutions. Please refer to Courses at Other Institutions in the Registration section. Total transfer credit towards a degree at Simon Fraser University may be limited to 60 credit hours.

International opportunities can be realized via student exchange programs, field schools, co-op work placements, and individual study abroad.

International Exchange Programs
Simon Fraser University has a number of academic agreements with universities and institutions around the world; some agreements encourage student exchange between the institutions. To participate in one of these programs, a student must meet all requirements for the program.

Transfer credit for these programs should be arranged before departure. Study at the host university may be possible in other disciplines or subjects. Address enquiries to the contact person identified.

The application deadline for exchange is February 15th. Application packages are available at the Office of International Cooperation at 778.782.5460.

Undergraduate Exchanges
Location - University (Usual Field of Study)

Melbourne, Australia - Monash University (all disciplines)
Aarhus, Denmark - Aarhus University (English, Arts)
Brighton, England - University of Sussex (Arts, Science)
Norwich, England - The University of East Anglia (Arts, Biology, Computing)
France - Institut Universitaire (Business [Co-op])
Grenoble, France - Universite Stendhal (French, Literature)
Giessen, Germany - Justus Liebig Universitat (English, Business)*
Koln, Germany - Universitat zu Koln (Arts, Social Sciences)
Saarbruchen, Germany - Universitat des Saarlandes (Arts, Social Sciences)
Hong Kong, Chinese University of Hong Kong (All disciplines)
Osaka, Japan - Kansai Gaidai (Asian/Japanese Studies)
Tokyo, Japan - Meiji Gakuln Daigaku (Asian/Japanese Studies)
Seoul, Korea - Yonsei University (Asian Studies/Business)*
Mexico City, Mexico - Instituto Tecnologico Autonomo de Mexico (Social Science/Business)*
Groningen, Netherlands - Hanzahogeschool (Business)*
Utrecht, Netherlands - Universiteit Utrecht (Psychology/Arts)
Manila, Philippines - De La Salle university (Arts/Asian Studies)
Dundee, Scotland - The University of Dundee (Arts)
Basel, Switzerland - Universitat Basel (English/Linguistics/Languages)
Albuquerque, USA - University of New Mexico (all disciplines)
Boston, USA - Northeastern University (Arts/Science)
Bellingham, USA - Western Washington University (Canadian/American Studies)
Honolulu, USA - University of Hawaii (various disciplines)
Orono, USA - University of Maine (Arts)

*Please note that the Faculty of Business Administration is also involved in a North American student exchange consortium involving 15 universities in Canada, Mexico and the USA. Simon Fraser University students have access to these universities through the exchange program.
Canadian Exchange Programs

Field Schools
Several departments and faculties at Simon Fraser University offer international schools. These field schools are opportunities for students to follow a particular program of study at an overseas location. The programs usually require a full semester of work, with at least three mandatory courses, for which Simon Fraser University credit will be given. Assignments and exams are completed overseas. A Letter of Permission is not needed.

Credit for field school course offerings is available to Simon Fraser University students.

Archaeology
Sponsored by Simon Fraser University. Locations examples include Tonga, Wyoming, British Columbia. Students must have completed prerequisites for 400 level courses. Summer term. Cost is paid by student. Contact Archaeology departmental assistant

Biological Sciences
Sponsored by Simon Fraser University. Location examples include Kenya, Cuba. Students must have completed prerequisites for courses. Spring, Summer, Fall terms. Cost is paid by student. Contact International Education Co-ordinator.

Chinese Studies
The Chinese Studies Field School program is sponsored by Simon Fraser University Alumni Relations. Located in Changchun, Jilin Province, Manchuria, China. Successful completion of CHIN 100, or possession of equivalent Mandarin language skills required. Summer term. Cost is paid by student. Contact the International Education Co-ordinator.

Havana Field School
The Havana Field School is sponsored by Simon Fraser University. Up to ten credits are available for study in Cuba, including courses in the Spanish Language, Latin American Studies and Biology. There are no prerequisites for participation. Cost is paid by the student. Contact the International Education Co-ordinator in the Office of International Co-operation.

Latin American Studies
The Latin American Studies program is sponsored by Simon Fraser University Alumni Relations. Latin American locations include Cuba and Nicaragua. Available for Latin American Studies and/or Spanish minors and majors; other students may be eligible. The term is usually the Fall semester. Cost paid by student. Contact M. Naisby, Continuing Studies.

Sociology and Anthropology
The South-East Asia Field School is held in Thailand in the Spring semester and is sponsored by the Department of Sociology and Anthropology. Credit is available for upper level courses in Sociology and Anthropology. The only prerequisite is a first year Sociology and Anthropology course. Cost is paid by the student. Contact the International Education Co-ordinator in the Office of International Co-operation.

Travel Study
The Travel Study program is sponsored by Simon Fraser University Alumni Relations. Credit available for English courses. European location examples include Britain, Switzerland, Italy. Open eligibility. Spring, Summer terms. Cost paid by student. Contact Alumni Relations director.

Exchange Programs with Canadian Universities
Simon Fraser University is a member of CUSEC, the Canadian University Student Exchange Consortium. Under this program, undergraduate students register and pay fees at their home institution but attend classes at another university in a different region of Canada. For purposes of this consortium, the five regions are: British Columbia, Prairies, Ontario, Quebec and Atlantic. Eligible students can continue to receive and qualify for SFU scholarships; under some conditions, regular limitations on the transfer of credit are waived. Students interested in finding out more about the CUSEC programs should contact the Academic Resource Office or R. Heath, Registrar and Secretary of Senate, Simon Fraser University.
Co-op Work Placements
International co-op work placements can count towards the completion of a Simon Fraser University degree. Students must be enrolled in a Co-operative Education program at Simon Fraser University. The international placements are available primarily to students in Science and Engineering related fields of study. Contact Co-operative Education.

Individual Study Abroad
Students may study at institutions in virtually any country and may receive Simon Fraser University transfer credit for their programs. Students must arrange these programs individually. Local financial, tuition, academic and language requirements must be met by the individual student. Information on procedures is available from the Office of the Co-ordinator of International Education.

Fee Reciprocity Agreements
Residents of Washington State, under an agreement of fee reciprocity, may register at Simon Fraser University. Limits are in effect. Term is open. Contact R. Heath, Registrar, Simon Fraser University or the registrar of a Washington State institution.

Letters of Permission
Simon Fraser University students who wish to take courses at international institutions for credit towards a Simon Fraser undergraduate degree, diploma or certificate must obtain permission in advance from their department chair (if a major has been approved) and the Dean of their Faculty. (They must also obtain permission from the chair of the department which will give credit for the course, if this is other than their major department.) A form for this purpose may be obtained from the Office of the Registrar.

When approval has been granted, the Office of the Registrar issues a Letter of Permission to the international institution specifying the SFU transfer credit to be given upon successful completion of the approved courses. Upon completion of the studies, an official transcript from the institution must be provided to the Office of the Registrar at Simon Fraser University.

Grades obtained by a student while studying on a Letter of Permission are not included in the calculation of Simon Fraser University grade point averages.

Transfer credit is not used in the calculation of the CGPA.

For more information, see Courses at Other institutions in the Registration section.

Admission and Readmission
The University welcomes applications from Canadian and International students. All new students must apply for and be granted admission to the University. Confirmation of an admission offer is required before students may register in courses.

Those who have previously attended Simon Fraser University but who fit into any of the following categories must apply for readmission.

- students who have not registered in courses at the University during the previous three semesters; or
- students who withdrew from their first semester at the University; or
- students who completed a degree or diploma program at the University and wish to take further courses; or
- students who were admitted for a single semester only, e.g. concurrent studies students

In all other cases students may register directly in courses.

Further information on readmission is given later in this section.

An advising service is available for potential applicants. Call 778.782.3397 for an appointment. Information and assistance for students with a physical disability are available from Eileen Lennox, Student Services, telephone 778.782.4170.
Admission Requirements
The following admission requirements are extracted from the more complete regulations approved by Senate. Authority for interpretation of the regulations rests with the Senate Undergraduate Admissions Board; the University reserves the right to reject or accept any applicant.

All percentages stated in these admission requirements 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 the Professional Development Program and the Engineering Science Program must have the approval of the Faculty of Education and the Faculty of Applied Sciences respectively, in addition to meeting the general admission requirements. For the application deadline for the Professional Development Program, consult the Academic Calendar of Events.

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 semester (see Continuing Studies.)

Program Approval
Newly admitted students who wish to take either a post baccalaureate diploma or a further undergraduate degree must obtain program approval from their faculty or department prior to registering in courses.

Enrollment Limits
Completion 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 from among the qualified applicants.

Examples of recent enrollment limits and consequent admission cut-off averages for general admission are as follows.

Fall Semester 1994 Acceptance
BC Grade 12 graduation: 1,425 admitted; 80% average
Grade 12 graduates from other provinces: 130 admitted; 80% average
BC college transfer: 925 admitted; 2.55 gpa average
Degree holders and transfers from universities: 490 admitted
Technical college graduates: 20 admitted; 75% average
Other: 160 admitted
Total: 3,150 admitted

Enrollment limits for any semester are subject to revision without notice.
All applications for admission must be made on the forms provided by the Office of the Registrar. The following supporting official documents must also be submitted from the issuing institution before any application will be considered.

- An official copy of the appropriate school leaving certificate (e.g. BC Secondary School Transcript of Grades).
- Official transcripts from all post-secondary institutions attended, whether or not the work was completed.
- Official reports of any standard tests written.
- Applicants whose primary language is not English must write a standardized English test (see English Language Requirements) and have the results submitted directly from the testing agency to Simon Fraser University. In some circumstances, this requirement will apply to students who have attended secondary schools or post-secondary institutions in Canada.
- For visiting students a letter of permission from their own institutions (students wishing to take work for transfer to a program at another institution). All documents must be originals. Uncertified photocopies are not acceptable. Replaceable documents submitted with an application become the property of the University and will not be returned.
- Applicants should submit application forms and any available documents as early as possible but not more than twelve months ahead of the semester they intend to begin studies. The deadlines for receipt of applications and documents are given in the Academic Calendar of Events. Applications received after the published deadline may be evaluated selectively at the discretion of the Director of Admissions.

Application and Document Evaluation Fees
All applicants for undergraduate admission to Simon Fraser will be required to pay a $20 application fee. This fee, non-refundable and not applicable to tuition fees, must accompany the Application for Admission form or be paid prior to making an application.

A fee of $25 is assessed for all applicants whose academic records, in whole or in part, originate outside British Columbia and are required for admission, transfer credit, or advanced standing. This fee is also non-refundable and not applicable to tuition fees. The document evaluation fee is waived if the documents originate from a secondary school located in Canada, or if the applicant is participating in a recognized exchange program between Simon Fraser University and another institution.

Admission Process Fall 1996 and Later
At the time of going to press, significant changes are being planned, changing the application for admission process for students entering Simon Fraser University undergraduate programs in the 1996 Fall and subsequent semesters. Further information may be obtained from the Post Secondary Application Service of British Columbia (PASBC), 1100 - 235 First Avenue, Kamloops, BC, V2C 3J4. Telephone (604) 828-4861.

International Students
The University limits new international students to not more than 7% of each year's entry.

In 1993, approximately 5% of undergraduate students were international, i.e. they were neither Canadian citizens nor Permanent Residents of Canada.

Each program or department which is operating at maximum capacity (limited enrollment program) may limit international students within that program to not more than 10% of approved majors, honors or minors. In February 1994, the only programs which are subject to this 10% limit are in the Faculty of Business Administration. Details are given under the Faculty of Business Administration.

British Columbia

Secondary Schools

General Admission Requirements
Students planning to enter one of the Faculty of Applied Sciences, Arts, Business Administration or Education must satisfy the following requirements.

- secondary school graduation
• Mathematics 11, Language 11 (beginner's Language 11 may be used) and Science 11 (acceptable subjects are Biology, Chemistry, Earth Science, Physics)
• English 12
• three additional grade 12 courses selected from the following.
  • AP Calculus AB
  • Biology (or AP General Biology or IB Biology)
  • Computer Science (or AP Computer Science A or AP Computer Science AB or IB Computer Science)
  • Chemistry (or AP General Chemistry or IB Chemistry)
  • Comparative Civilizations
  • English Literature (or AP English Literature and Composition, or IB English Literature)
  • French or French 12A (or AP French Language or IB French)
  • Geography (or IB Geography)
  • Geology
  • German (or AP German Language or IB German)
  • History (or AP European History or IB History)
  • IB Russian
  • Japanese (or IB Japanese)
  • Latin (or AP Vergil [Latin])
  • Mandarin (or IB Mandarin)
  • Mathematics (or IB Algebra or IB Mathematics)
  • Physics (or AP Physics B or IB Physics)
  • Spanish (or AP Spanish Language or IB Spanish)
  • Survey Mathematics
  • Western Civilization (1995 only) (or IB Western Civilization)
  • Writing

Notes: AP indicates an approved Advanced Placement Program course and IB indicates an approved International Baccalaureate course.

Approved Programme Cadre and French Immersion courses equivalent to the above are also acceptable, except that Francais 12 is not accepted in lieu of English 12.

Locally developed courses are not acceptable unless approved in advance by Simon Fraser University.

The minimum average required for admission is 67% calculated on English 12 and the best three additional academic Grade 12 subjects, as selected from the above list. Applicants with averages below 67% are strongly advised to undertake a year of study at a community college and subsequently apply to Simon Fraser University as transfer students.

Actual final percentage marks will be used, whenever available. If not given, the following equivalents are used in computing the average:

\[ A = 4.0 \text{ or } 91\%; \ B = 3.0 \text{ or } 79\%; \ C+ = 2.5 \text{ or } 70\%; \ C = 2.0 \text{ or } 64\%; \ C- \text{ or } P = 1.0 \text{ or } 56\% \]

Students who plan to major in Business Administration or Economics are advised to include Mathematics 12 in their secondary school programs; intending Criminology, Linguistics or Psychology majors should include Mathematics 12 or Survey Mathematics 12. Students who plan to take courses in Computing Science are advised to take Computer Science 12.

Engineering Science Admission Requirements
Secondary school students who wish to enter the Engineering Science program (BASc) are required to fulfill the general admission requirements, and to include Mathematics 12, Chemistry 12 and Physics 12*. Computer Science 12 is recommended. Admission is highly competitive.
*or equivalent Advanced Placement or International Baccalaureate courses as listed above under General Admission Requirements for British Columbia Secondary Schools.

Kinesiology Admission Requirements
Students will be eligible for formal acceptance into the Kinesiology major program [Bachelor of Science (Kinesiology)] if they fulfill the general University admission requirements

- complete Biology 12 with a minimum mark of 67% (C+)*
- complete Mathematics 12 with a minimum mark of 73% (B)*
- complete at least one of Chemistry 12 and Physics 12 with a minimum mark of 67% (C+) Computer Science 12 is recommended, if available.

*or equivalent Advanced Placement or International Baccalaureate courses as listed above under General Admission Requirements for British Columbia Secondary Schools.

When the number of eligible applicants exceeds the number that can be accommodated, the University reserves the right to select from among the qualified applicants.

Faculty of Science Admission Requirements
Secondary school students planning to enter the Faculty of Science must satisfy the following requirements:

a) secondary school graduation

b) five specified Grade 11 courses, as follows.

- Chemistry 11
- English 11
- Mathematics 11
- Physics 11
- an approved Language 11 (a beginner's Language 11 course is not acceptable)

c) four specified Grade 12 courses with minimum grade in each, as follows:

- English 12 mark of 67% (C+ or higher)*
- Mathematics 12 mark of 67% (C+ or higher)*
- two approved Science 12 courses mark of 67% (C+ or higher) (approved Science 12 courses are Biology, Chemistry, Computer Science, Geography, Geology, Physics, Survey Mathematics)*

d) overall average of C+ (2.5) calculated on all 9 required courses in b) and c).

*or equivalent Advanced Placement or International Baccalaureate courses as listed above under General Admission Requirements for British Columbia Secondary Schools.

Note: average is calculated in GPA terms, not as a percentage.

Students meeting these requirements will be eligible for direct entry to the Faculty of Science.

Students who are interested in the life sciences (i.e., Biological Sciences, Biochemistry) are strongly advised to include Biology 12 in their secondary school programs. Students who plan to enter science programs (including Biological Sciences, Biochemistry, Chemistry, and Physics) are strongly advised to include Chemistry 12 and Physics 12 in their secondary school programs, and to obtain a grade of B or better in Mathematics 12. If a student lacks any of these courses, substitute courses may be taken, but degree completion could be delayed.
Independent School Admission Requirements
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.

International Baccalaureate Admission Requirements
All applicants (including BC residents) who have completed the International Baccalaureate Diploma may be admitted subject to a minimum overall score of 27. Transfer credit will be granted for some higher level subjects passed with a grade of 4 or higher; no transfer credit will be granted for subsidiary level subjects. The maximum transfer credit awarded is 30 semester hours.

Students with incomplete or partial International Baccalaureate programs will be considered for admission on the basis of secondary school graduation. Transfer credit will be granted for some higher level subjects passed with a grade of 5 or higher.

Art/Design - Transfer credit: FPA, Art History (6)
Biology - Transfer credit: BISC 101, 102 (8)
Organization & Management Studies - Individual assessment
Chemistry - Transfer credit: CHEM 102, 103 (6); Standing in: CHEM 115
Computing Studies - Transfer credit: CMPT (6)
Classical Language - Transfer credit: general elective, Greek (6) or general elective, Latin (6)
Economics - Transfer credit: ECON (6)
English (Language A) - Transfer credit: ENGL (3). Contact English Department for individual assessment if high grade in any Simon Fraser University 100 level ENGL course received subsequently. (Language B) - No credit
French (Language A) - Individual assessment; (Language B) - Individual assessment
Geography - Transfer credit: GEOG 100, 111 (6)
History - HIST 225 (3), HIST (3)
History of East Asia - HIST (3)
Languages (A or B) - Individual assessment
Mathematics - (and further Math) Individual assessment
Music - Transfer credit: FPA 104 (3), FPA, Music (3)
Philosophy - Transfer credit: PHIL (6)
Physics - Transfer credit: PHYS 101, 102 (6) Contact Physics Department for individual assessment if grades are high.
Physical Science - No credit
Social Anthropology - Transfer credit: SA (6)

Advanced Placement Program Recognition
Transfer credit and/or advanced standing will be granted to students who complete certain Advanced Placement Program examinations with grades of 4 or 5. Transferable subjects are as follows.

Biology - Transfer credit for BISC 101, 102 (8 credits)
Calculus AB - Transfer credit for MATH 151 (3 credits)
Calculus BC - Transfer credit for MATH 151, 152 (6 credits)
Chemistry - Advanced standing in CHEM 102, 103 (no credit)
Computer Science A - Transfer credit for CMPT 103 (3 credits)
Computer Science AB - Transfer credit for CMPT 101, 104 (4 credits)
Economics - micro - Advanced standing in ECON 100 (no credit)
Economics - macro - Advanced standing in ECON 100 (no credit)
English Language & Composition - Transfer credit for ENGL (3 credits)
English Literature & Composition - Transfer credit for ENGL (3 credits)
French - See note 2 below.
American History - Transfer credit for HIST (3 credits)
European History - Transfer credit for HIST 106 (3 credits)
Physics B - Transfer credit for PHYS 101, 102 (6 credits)
Physics C - Mechanics - Transfer credit for PHYS 120 (3 credits) See note 1 below.
Physics C - Electricity & Magnetism - Transfer credit for PHYS 121 (3 credits) See note 1 below.
Spanish Language - Advanced standing in SPAN 303
Spanish Literature - Advanced standing in SPAN 240, 103
Course challenge (credit by examination) is also available in some disciplines.
Note 1: Please note that the following topics are not covered in APP Physics C but are included in PHYS 120 and 121: heat, kinetic theory, thermodynamics, wave motion, interference diffraction, geometric optics and some topics in modern physics and special relativity.

Note 2: Most students entering their first French course at Simon Fraser University take a short placement test. Challenge credit is available to a maximum of 13 credits if you are placed in and complete a course higher than FREN 151 with a C grade or better.

**Adult Basic Education Provincial Diploma Admission Requirements**

Applicants who have completed the Adult Basic Education Provincial Diploma must be at least 19 years of age and must meet the following requirements.

- either Adult Basic Education Advanced Level
- or Grade 11 completion

If Grade 11 has been taken, the following courses must be included.

- English 11
- Mathematics 11
- Language 11 (beginner's language 11 may be used)
- Social Studies 11
- Science 11 (acceptable subjects are Biology, Chemistry, Earth Science, Physics)

Four subjects at the provincial level including English and three additional subjects selected from the following: Biology, Algebra or Mathematics, Chemistry, Computer Science, English Literature, Geography, Geometry, History, Languages, Physics, Statistics, Trigonometry

All four provincial level subjects should be graded; a minimum average of C+ is required. Entry requirements for Engineering Science, Kinesiology and the Faculty of Science parallel those for BC secondary school graduates.

**Community Colleges**

**General Admission Requirements**

Students applying for admission to the Faculties of Applied Sciences, Arts, Business Administration, and Education from BC colleges must complete at least one full year (30 semester hours) of transferable work with a minimum average of 2.0 or 60%. Up to 60 semester hours of transfer credit will be awarded for acceptable passed courses.

Applicants who met the University's admission requirements after completing Grade 12 may be admitted on the basis of those requirements, provided that they have attempted less than 30 semester hours of transfer credit. However, they will not be admitted if they present three or more transferable courses equal to 9 or more semester hours with an average of less than 2.0 or 60%.

A transfer guide, listing all transferable courses and the Simon Fraser University course equivalents is accessible through the Internet on the University's Campus Wide Information Service (Gopher).

**Engineering Science Admission Requirements**

Transfer students who wish to enter the Engineering Science program (BASc) are advised to complete one full year (30 semester hours) of transferable Science or Engineering courses. Admission is highly competitive.

**Kinesiology Admission Requirements**

Transfer students will be eligible for formal acceptance into the Kinesiology major program BSc (Kinesiology) if they

- fulfill the general University admission requirements
- have completed Biology 12 and Mathematics 12 (or equivalents), and at least one of Chemistry 12 and Physics 12 (or equivalents)
- have completed at least 30 semester hours of transfer credit, including at least 24 transfer credits in the following. BISC 101 KIN 142, 201, 203 (or CMPT 103), 205, 207
BICH 221 MATH 151 (or 154), 152 (or 155)
CHEM 102, 115, 150, 155 PHYS 101 (or 120), 102 (or 121), 130 (or 131)
- have a 2.00 GPA or higher calculated from 24 of the transfer credits listed above.

When eligible applicants exceed the number that can be accommodated, the University reserves the right to select from among the qualified candidates.

Faculty of Science Admission Requirements
Transfer students will be considered for admission to the Faculty of Science if they have completed the following.

- Mathematics 12 (or equivalent) with a minimum grade of C+
- two of grade 12 Biology, Chemistry, Physics, Geology, Geography or Survey Mathematics (or equivalents) with a minimum grade of C+ in each
- a minimum admission GPA of 2.0 (BC colleges and universities)
- completion of at least 30 semester hours of transfer credit

Post secondary courses, bearing university transfer credit, such as PHYS 120, satisfy the respective grade 12 course requirement (i.e. Physics 12). If transferable courses are used, a C minimum grade is acceptable.

Associate of Arts/Science Degree Admission Requirements
Graduates with AA or ASc degrees from BC community colleges will be offered first priority in admission, subject to the following conditions.

- successful completion of at least 54 semester hours of credit, transferable to Simon Fraser University
- minimum 2.0 admission GPA based on the transferable courses

Associate in Science Diploma Admission Requirements
Guaranteed admission to the Faculty of Science is offered to Associate in Science Diploma graduates from Fraser Valley, Douglas, and Kwantlen colleges. Specific courses and a minimum 2.50 GPA are required. Please contact Admissions for further information.

British Columbia Institute of Technology Admission Requirements
Students with a BCIT diploma may be admitted with an overall second class or 65% average. Transfer credit may be granted on the recommendations of the appropriate departments at Simon Fraser University.

Universities/BC Open University Admission Requirements
Applicants in good standing at the transferring university may be admitted with a minimum average of 2.0 or 60%. In most cases credit courses at the transferring institution will be accepted for transfer credit up to a maximum of 60 semester hours. 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 not be admitted only if they have completed a further year (30 credits or more) of transferable work, with at least a 3.00 GPA.

Emily Carr College of Art and Design Admission Requirements
Applicants from the college will be subject to the requirements given under community colleges.

Degree Holders Admission Requirements
Applicants holding recognized baccalaureate 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 take undergraduate courses which are not for credit toward a degree, diploma or certificate program.

Applicants with baccalaureate degrees from a British Columbia university may be admitted with an average of 2.0 or 60%. In some cases a higher average and additional requirements may be necessary. The average is calculated on the last two years of study.
Special Categories Admission Requirements
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. Three special categories are available - Mature Student Entry, Early Entry and Concurrent Studies.

Only Canadian Citizens or Permanent Residents are eligible for these special categories. Applicants must meet one of the following residency qualifications (documentary evidence should be submitted). They must have

- been born in BC, or
- been a resident of BC for the six months prior to the proposed date of entry to Simon Fraser University, or
- resided in BC for a total of five years at some time.

Mature Student Entry Admission Requirements
Applicants aged 23 years or older who have attempted less than one year 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 supply a personal letter outlining why entrance to a University program is sought. Mature students are expected to have successfully completed some post-secondary work, usually 3-4 transferable academic courses (9-12 semester hours), and ensured that they have no background deficiencies in essay writing, mathematics, etc. Applicants are strongly advised to contact the Admissions in the Office of the Registrar at least six months prior to the expected admission date. Enquiries should be directed to the Director of Admissions.

Applicants who have completed a year or more of transferable post-secondary work (i.e. 30 semester hours or more) are ineligible for mature student entry and may be considered for admission as a transfer student.

Early Entry Admission Requirements
This category is for outstanding students who have completed Grade 11; applicants must have exceptional academic records and mature intellectual development. Admission under this category is at the discretion of the Admissions Board. Applicants must submit letters of recommendation from their school principals, along with official copies of their academic records. For more information, please contact the Director of Admissions.

Concurrent Studies Admission Requirements
Students with superior academic records may apply for limited admission to take one or two University courses while still attending secondary school. Admission will be limited to one semester, with a maximum of two courses in the semester. Credit for these courses may be applied to academic degrees if the student is subsequently admitted to a regular program at the University.

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. Enquiries should be directed to the Director of Admissions.

Irregular Admission Requirements
Applicants may apply for Irregular Admission, giving limited access to certain courses offered by the Faculty of Education. This category allows certified teachers in British Columbia, 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 they receive no registration priority. Irregular admission students may take no more than eight credit hours per semester to a maximum of 16 in total. Eligibility to re-register after each semester is subject to the approval of the Faculty of Education. For further information, contact the Faculty of Education.

Other Canadian Provinces
Secondary Schools and CEGEP
Please consult the current publication Summit for more detailed information.
The admission average will vary depending on the number of applications received and on space available in our programs. It will not be lower than 65% (70% from CEGEP). The admission average will be calculated on the required senior English course or courses (i.e. group requirement #1) and on the three best academic courses offered in the other course groups as shown below.

Applicants to the Engineering Science program must meet the general admission requirements and should have completed senior courses in Math, Chemistry, Physics and Computer Science.

Applicants to the School of Kinesiology will be eligible for formal acceptance into the Kinesiology major program [Bachelor of Science (Kinesiology)] if they

- fulfill the general University admission requirements
- complete a senior biology course with a minimum mark of 67%
- complete a senior mathematics course with a minimum mark of 73%
- complete at least one senior chemistry of physics course with a minimum mark of 67%

A senior computer science course is recommended, if available.

When eligible applicants exceed the number that can be accommodated, the University reserves the right to select from among the qualified applicants.

Faculty of Science applicants must meet the general admission requirements and should have completed senior courses in Math and at least two of Biology, Chemistry, Physics, Computer Science, Geology and Geography.

Alberta and Northwest Territories
Applicants must supply evidence of academic grade 12 completion leading to graduation and include at least five courses, selected as follows.

1. English 30
2. at least three additional courses selected from among: Biology 30, Chemistry 30, Language 30, Language 31, Math 30, Math 31, Physics 30, Social Studies 30, Science 30, World Geography 30
3. additional level 30 or 31 courses acceptable and necessary for the completion of grade 12

Admission average will be based on English 30 and the three best courses in group 2.

Saskatchewan
Applicants must supply evidence of completion of academic level three (grade 12) leading to graduation, including at least seven academic subjects selected as follows.

1. English A30 and B30
2. Algebra 30 or Geometry-Trigonometry 30 or Mathematics 30
3. at least two additional 30 or 30H numbered courses selected from among the following: Algebra, Biology, Calculus, Chemistry, Français, French, Geography, Geometry-Trigonometry, History, Mathematics, other languages or Physics
4. additional courses acceptable and necessary to successfully graduate.

Admission average will be based on English A30, B30, the best mathematics course in group two and the best two courses in groups two or three.

Note: English is a double course so this average is over five courses but only four subject areas.

Manitoba
Applicants must supply evidence of completion of an academic level three (grade 12) program which will lead to graduation and includes at least five courses selected as follows.

1. English 300
2. at least three additional courses selected from among Biology 300, Chemistry 300, Computer Science 305, Cree or Saulteaux 305, French 300, Francais 300, Geography 300, German 300, Hebrew 300, History 300, Histoire 300, Latin 300, Mathematics 300, Mathematics 301, Music 305, Physics 300, Spanish 300, Ukrainian 300
3. at least one additional Grade 12 (level 300) course and further courses necessary for graduation

Admission average will be based on English 300 and the three best courses in group two.

Ontario
Applicants must supply evidence of completion of the OSSD (or OSSHGD) including six OACs and including the following.

1. one OAC English (Language and Literature recommended)
2. at least three additional OAC courses selected from among English, Francais, other languages, Algebra and Geometry, Calculus, Finite Mathematics, Biology, Chemistry, Computing Science, Physics, Geography, History, and not more than one of Visual Art, Drama or Music (note that only one of the last three may be included among group 2 courses).
3. additional OAC courses necessary to complete the OSSD

Admission average will be based on OAC English and the three best courses in group two excluding, Visual Art, Drama or Music.

Quebec
Applicants from a CEGEP must present either a completed DEC or at least one year of an approved academic program. Admission requirements are currently under review. Contact Admissions, Office of the Registrar, for information.

Quebec Grade 12
Applicants from Quebec Grade 12 must present the following:

1. English 12
2. at least three additional university preparatory grade 12 courses selected from mathematics, sciences, languages, literature, social sciences, history, geography
3. additional academic subjects required for graduation

Admission average will be based on English 12 and the three best courses in group two.

New Brunswick
Applicants must supply evidence of completion of an academic (i.e., college preparatory) program which will lead to graduation and includes at least six courses as follows.

1. English 121 or 122 (or Francais 121 or 122)
2. at least three additional grade 12 academic (college preparatory) courses selected from among Biology, Chemistry, Computer Science, English, Francais, French, Geography, History, Latin, Mathematics, Physics, Trigonometry
3. additional grade 12 academic (college preparatory) courses acceptable and necessary to complete grade 12

Admission average will be based on English 121 or 122 and the three best courses in group two.

Prince Edward Island
Applicants must supply evidence of completion of an academic or advanced academic program which will lead to graduation and includes at least five academic and/or advanced academic subjects selected as follows.

1. English 621 or English 611
2. Math 621 (Algebra and Trigonometry 621)
3. at least three additional courses numbered 621 and/or 611 selected from among Biology, Chemistry, Francais, French, Geography, History, other languages or Physics
4. additional courses necessary for graduation
Admission average will be based on English 621 or 611, Math 621 (or equivalent) i.e. group two and the two best courses in group three.

Nova Scotia
Applicants must supply evidence of completion of an academic (i.e., university preparatory) program which will lead to graduation, including at least five subjects selected as follows.

1. English 441 or English 541
2. at least two additional courses numbered 441 and/or 541 selected from among the following subjects: Biology, Chemistry, French, History, Math, other languages, Physics or Math 442.
3. additional courses numbered 441 or 541 from those listed immediately above, or from Economics, Geology, Home Economics, Law, Modern World Problems, Music, Physical and Health Education, Political Science or Sociology, acceptable and necessary to graduate (i.e., to total at least five courses 441 and/or 541)

Admission average will be based on English 441 or 541, the two best courses in group two and the best further course in group two or either Geography or Modern World Problems from group three.

Newfoundland
Applicants must supply evidence of completion of an academic program which will lead to graduation and includes at least thirteen credits as follows.

1. English 3101 and either English 3201 or 3202
2. Mathematics 3201 or 3203
3. any one of Biology 3201, Chemistry 3202, Geology 3203, Physics 3204
4. any one of Geography, History or languages at the 3000 level
5. at least two additional 3000 level academic credits from groups 1 to 4
6. additional academic credits acceptable and necessary to graduate (i.e., at least 13 credits)

Admission will be based on both courses in group one, the better course in group two and the two best courses in groups three or four.

Note: English is a double course so this average is over five courses but only four subject areas.

Institutes of Technology/Colleges of Applied Arts and Technology
Students with diplomas from Canadian institutes of technology or colleges of applied arts and technology may be admitted with an average of 70%. Transfer credit may be granted based on overall academic background and on the recommendations of the appropriate departments at Simon Fraser University.

Universities
Applicants in good standing at other universities may be admitted with a minimum average of 65% (2.4). Other requirements are the same as those for students transferring from a British Columbia university.

Degree Holders
Applicants holding first 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 take undergraduate courses which are not for credit toward a degree, diploma or certificate program.

Applicants with first degrees from universities outside British Columbia may be admitted with a minimum average of 2.4 or 65%.
Other Countries

Secondary Schools

United States
American high school students may be considered for admission if they have, or are predicted to have, a GPA of 3.2 or higher based on a combination of Grade 11 and 12 academic courses, test scores (i.e. SAT, ACT), honors student, rank in class, and on whether the student has taken advanced academic courses (e.g. International Baccalaureate, Advanced Program). The percentage is based on a scale with a 50% pass mark; when some other pass mark is used the minimum average is adjusted.

Other Countries
For information regarding secondary school admission requirements for students from other countries, contact the Office of Admissions.

Universities or Colleges
Applicants in good standing at foreign universities may be admitted with a 65% (2.4) minimum average on transferable work. The following conditions apply.

- studies must have been at a fully accredited institution of higher learning
- 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
- 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 (30 credits) or more of transferable work, with at least a 3.00 GPA.
- maximum transfer credit allowed is 60 semester hours

Secondary school diplomas or certificates must show the grades obtained in each subject, otherwise applicants must have an official transcript sent by the school to the Director of Admissions and Liaison.

Students are requested to send a copy of their institution's Calendar, showing details of all courses taken, to help speed processing. In some cases detailed course outlines will be required before transfer credit can be evaluated.

Degree Holders
Applicants holding recognized first degrees may be admitted to undergraduate studies to undertake a second or subsequent degree at the Bachelors level, or to undertake a diploma or certificate. Applicants may also gain admission as Special Students to take undergraduate courses which are not for credit toward a degree, diploma or certificate program.

Applicants with a first degree from a university outside British Columbia may be admitted with a minimum average of 2.4 or 65%. The average is calculated on the last two years of study.

English Language Requirements

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 a command of English sufficient to meet the demands of classroom instruction, written assignments and participation in tutorials and discussions.

The University will take into account the following factors in assessing an applicant's facility in the English language.

- the primary language of the applicant (the language ordinarily spoken in the home and in the workplace)
- the duration of residency in an environment in which English is the predominant language
- the duration of study and the language of instruction in any secondary and post-secondary educational institutions
- the results obtained in any academic secondary and/or post-secondary courses in which a high standard of English is required.
Applicants who consider English their primary language may request in writing an exemption from further English tests. Requests should be addressed to the Director of Admissions and should be accompanied by supporting evidence.

**Required English Tests**
Applicants who, in the judgment of the University, do not have sufficient experience or skills in written and spoken English will be required to achieve a satisfactory score on the Test of English as a Foreign Language (TOEFL) and Test of Written English (TWE). The minimum scores for admission are: TOEFL 570; TWE 5

If a candidate is unable to provide a TWE score, a TOEFL score alone will be accepted, subject to a minimum score of 600. Further details about the above tests may be obtained from

TOEFL and TWE
Educational Testing Service
CN 6151, Princeton, NJ, 08541-6151, USA

**Advance Standing**
Advance standing is placement to a certain level in a subject area granted to students on admission. The department concerned examines the applicant's previous work, or asks him/her to take a placement test, and then places the applicant at a certain level in the sequence of courses in the department.

**Transfer Credit**
Transfer credits are credits granted to students on admission on the basis of work done at another accredited institution; the transfer credits reduce the total number of credits which must be taken at Simon Fraser University for a degree, diploma or certificate. Transfer credit should not be confused with advanced standing - transfer credit is often given without any concomitant advance standing; the reverse may also may be true.

**Regulations**
Total transfer and course challenge credit may not exceed 60 semester hours, and may not include more than 15 semester hours credit as upper division work. Within these limits, credits may be transferred for all courses passed, which are acceptable under University policies.

Transfer credit is not used in the calculation of the 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 at Simon Fraser University for such work or knowledge.

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

- work taken after initial registration must be passed with a grade of C (2.0 or 60%) or higher to receive transfer credit; and
- students wishing to complete transfer credit after initial registration must obtain permission in advance, using the form available from the Office of the Registrar.

Please refer to Courses at Other Institutions in the Registration section for more information.

To qualify for a specific minor on a degree program, at least 7 semester hours of the upper division credit used toward the minor must have been completed through Simon Fraser University courses.

Students completing certificates or diplomas should be aware that each program has its own specific restrictions on the amount of transfer credit permitted. Students should consult the appropriate sections in the Calendar for these limitations.
Special transfer credit regulations apply to the Bachelor of General Studies degree, Bachelor of Education degree to the Bachelor of Applied Science degree in Engineering Science and to students attending other universities on formal exchange programs. Refer to the Faculty of Arts, Faculty of Education, and Faculty of Applied Sciences sections respectively.

An applicant seeking admission with transfer credit is advised that the courses transferred, together with those he/she subsequently takes at Simon Fraser University, must meet the general and specific requirements of the faculty and department in which he/she chooses to major or honor. Some of the transfer credit awarded may be designated "General Elective Credit." Individual faculties may restrict the amount of general elective credit that may be counted toward a degree in that faculty. The applicant should not assume that he/she will complete the degree with a number of semester hours equal to the difference between total hours required for the degree and transferred hours. Although this calculation will usually be correct for a student who remains within a field of study, it will not necessarily be correct for a student who changes fields.

Transfer credit is designated at Type one, two, or three. Type one is assigned credit, used when there is a Simon Fraser University equivalent. Type two is unassigned credit in a subject area, used for courses without 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 (3)" means that three semester hours of credit in Biological Sciences have been granted. Type three is general elective credit, used for courses which are judged to be transferable but do not fulfill specific faculty departmental requirements (other than Faculty of Arts and Faculty of Business Administration group requirements). General elective credit is counted toward the total number of hours required for the degree. Examples include "General Elective - Classical Studies" and "General Elective - Environmental Studies." Individual faculties may restrict the amount of general elective credit that may be counted toward a degree in that faculty.

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

**Readmission and Re-registration**

Students who have previously attended Simon Fraser University and who fall into any of the following four categories must apply for readmission or re-registration by completing the application for readmission form available from the Office of the Registrar.

- Absence from the University for three or more consecutive semesters. A student who does not register in at least one of three consecutive semesters is considered to have withdrawn. These applicants will be asked to state educational and other relevant activities since the last semester attended, and to submit official transcripts from any post-secondary educational institution(s) attended during their absence.
- Voluntary withdrawal from first semester of attendance. New students who withdraw before completing any course work are required to apply for readmission if they wish to register in a subsequent semester, unless they withdrew under extenuating circumstances, after the application deadline for the subsequent semester.
- Completion of academic goals. Students who complete a credential (Bachelors degree, diploma, or Professional Development Program if already a graduate,) in any semester must apply for readmission to enroll in additional courses at the University in a subsequent semester. This requirement also applies to those students who have submitted formal application for graduation and who wish to continue their studies in a semester following the one in which degree requirements were met.
- Completion of a semester by a concurrent studies student who wishes to continue at the University.

Those who receive certificates or who complete a Professional Development Program before their Bachelors degrees may register in subsequent semesters without applying for readmission.

An application by former Simon Fraser University students may be categorized as

- re-registration: the student has completed no academic work during the time away from Simon Fraser University, and is in academic good standing.
- readmission: the student has either completed a credential, such as a degree, or has taken coursework elsewhere, or was required to withdraw from Simon Fraser University.
**Holders of Simon Fraser University Bachelors Degrees**
In addition to submitting an application for readmission, former Simon Fraser University students who plan to undertake a program of study leading to an additional Bachelors degree or toward a diploma are urged to obtain permission from the appropriate department and faculty as soon as possible. Such students entering certificate programs should obtain permission from their faculty advisors.

Students holding Simon Fraser University Bachelors degrees may also apply for readmission to undertake undergraduate courses as Special Students.

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

In signing 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).

**Retention of Documents**
The documents which you supplied to support your application for admission will be retained for three semesters, following the semester to which application is made. Then, application forms, transcripts and other materials related to your application will be destroyed. Irreplaceable documents will be returned to you if you request their return when you apply for admission.

**Registration**
Registration is the process of formally assigning and recording the enrollment of a student in a course or courses. Registration is open only to those who have been already admitted or readmitted to the University, or who are eligible to re-register. An exception to this condition is that Special Audit students need not be formally admitted before registration (see General Information).

Under the trimester system a student must register separately in courses for each semester or session of attendance with the exception that registration for any of the Summer session, Intersession and Summer semester may be combined. Students are given access to the telephone registration system based on the registration priority number (RPN). The RPN is based on the student's cumulative grade point average on the number of hours completed and in progress. In RPN order, students are assigned a date from which access to the telephone registration system is activated.

Note: The registration procedure for designated off-campus programs and Distance Education courses is the same as for on-campus courses. Specific details on these programs are available in brochures published each semester; for further information see the Continuing Studies section.

Information on how to register and details concerning the day, time, place and instructor for courses is provided each semester in the Course Timetable and Registration Instructions. Simon Fraser University reserves the right to make changes in these arrangements without notice although the University will endeavor to inform students affected by such changes.

**New Students**
After the application for admission has been assessed, the applicant will be advised of his/her eligibility for admission. If admitted, the student will receive full instruction on the procedure to be followed to register for courses.

**Continuing Students**
Students who have registered for one or more of the last three semesters and who are eligible to continue (see General Regulations), will be advised of registration procedures and deadlines well in advance of each semester.

**Former Students**
Under certain conditions, former students must submit formal application for readmission in order to continue academic studies at the University (see Admission and Readmission).
Course Loads
The following maximum course loads apply to all students, but certain students may be granted permission by their respective faculties to register in course overloads (see below).

Regular Session
The maximum course load for all students who are not registered for Summer Session courses only, or Intersession courses only and who are not entering their graduating semester is as follows:

<table>
<thead>
<tr>
<th>Lower Levels</th>
<th>Upper Levels (excluding School of Engineering Science)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Sciences 16 hours</td>
<td>All Faculties 18 hours</td>
</tr>
<tr>
<td>Arts 16 hours</td>
<td>All Levels (School of Engineering Science only)</td>
</tr>
<tr>
<td>Business Administration 16 hours</td>
<td>Normal course load 20 hours</td>
</tr>
<tr>
<td>Education 16 hours</td>
<td>Maximum course load 22 hours</td>
</tr>
<tr>
<td>Engineering Science (see All Levels below)</td>
<td>Science 18 hours</td>
</tr>
</tbody>
</table>

Permission of the Director of the School of Engineering Science is required for reduced course loads below 15 hours.

Intersession or Summer Session Only
Students enrolling for the Intersession or Summer session only, may not enroll in programs having a total value in excess of nine semester hours, except where course combinations may require registration in a program of 10 semester hours; however, no student will be permitted to undertake a program of more than 10 semester hours of work.

Summer Semester, Intersession, Summer Session Combinations
The normal course load limits apply to students who register in combinations of the above. For purposes of course load values only, in the regular Summer semester the course load value corresponds to the semester hour credit allocated for the course. In the Intersession or Summer session, the course load value is twice the semester hour credit shown for the course. (This arises because in the shorter session classes must meet twice as often for longer periods to equal the time of the regular semester.)

Therefore in calculating course load value, note the following example.

ARCH 371-5 (if taken in Summer semester) 5 semester hours equals 5 course load credit.

ARCH 372-5 (if taken in 8 week Intersession or Summer session) 5 semester hours equals 10 course load credit

Evening and Distance Education Courses
Students enrolled in evening or Distance Education courses only, are advised to register for not more than 6 semester hours of work at any one time.

Course Overloads
No student who is on Academic Probation may register in a course overload.

In the Faculties of Applied Sciences, Arts, Business Administration, and Education only, a student who requires an overload in order to fulfill graduation requirements in the semester for which he/she is registering may be allowed, with the Dean's permission, to register in an overload.

In the School of Engineering Science, permission of the Director is required for course overloads exceeding 22 hours.

In the Faculty of Science, a student entering the graduating semester requiring specific courses in order to fulfill graduation requirements in the semester for which the student is registering, may be permitted to enroll in courses totalling up to 21 hours, provided either the cumulative grade point average or the most recent semester 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 registered on an individual basis during the course change period.
Limits on Duplication of Courses
The number of courses which a student may duplicate in his/her degree program is limited to five; this limit may be extended by the Dean of the Faculty.

Students who are intending to register in their sixth or subsequent duplicate course should seek advice from their major department or the Academic Resource Office before submitting their requests for extension of the limit to their respective Dean.

No individual course may be duplicated more than once except with the permission of the department offering the course. Students wishing to register in a course for the third or subsequent time should consult an advisor in the department.

Courses at Other Institutions
Simon Fraser University students who wish to take academic work at other institutions for credit toward an undergraduate degree, diploma or certificate at this University must obtain permission in advance from their Department Chair (if a major has been declared) and the Dean of their Faculty. A form for this purpose may be obtained from the Office of the Registrar. When approval has been granted, the Office of the Registrar will issue a Letter of Permission form to the institution which the student plans to attend, if required by that institution.

Except as noted below, total transfer and course challenge credits may not exceed 60 semester hours and not more than 15 semester hours of transfer credit may count toward upper division requirements. Each diploma and certificate program has its own specific limit, and students should consult the appropriate section of this Calendar for such restrictions. Within these limits, credit may be transferred for all courses passed with a grade of "C" (2.0 or 60%) or higher, and which are acceptable under Simon Fraser University's transfer policies. Transfer credit is not used in the calculation of the cumulative grade point average. Students should refer to the Admission and Readmission section for transfer credit information.

For information concerning maximum transfer credit pertaining to Education (EDUC) 401/402, 405, see the Faculty of Education regulations.

For students working toward a Bachelor of General Studies degree, special regulations provide more hours of transfer credit from a degree granting institution recognized by Simon Fraser University. Please refer to the Faculty of Arts section.

Students who are pursing a Bachelor of Applied Science degree in Engineering Science should see the Engineering Science section.

Duplicate Transfer Credit
Students may not receive transfer credit for a course which is a duplicate of a course passed at Simon Fraser University.

If a student registers for a duplicate course, and completes the course with a passing grade, the transfer credit will remain on the academic record as a duplicate, with a zero credit value. If the course is completed with a failing grade, or is dropped, the transfer credit will remain on the academic record. A department may permit credit 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 duplication will not apply to duplicate transfer courses. The implementation of this policy will not affect the method of calculating grade point averages.

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 semester hours of credit may be obtained by the combined mechanism of course challenge and transfer credit.

A student must be eligible to register in order to register 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 register in one semester for both regular enrollment 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 semester later than ten days following the commencement of University classes.
• a student is not entitled to register 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

A listing of undergraduate courses approved for course challenge is available at the Office of the Registrar.

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

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

Registration for Course Challenge
Any eligible student who wishes to register for course challenge in a given semester must obtain an official Course Challenge Registration Form from the Office of the Registrar, seek approval of the appropriate department Chair to register for course challenge in that department, and return the completed form to the Office of the Registrar by the tenth day following commencement of classes. Normally, a student may not complete registration for course challenge after the end of the tenth day of classes. During the first ten days of classes, a student may change registration in course challenge from one course to another or to regular enrollment in courses, but may not withdraw from course challenge without substitution of regular course enrollment. 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 registration procedures, which include written approval of the department concerned. A student who has been given permission to audit a course will not write the final examination nor be given credit for the course. The course will be listed on the student's record with the notation "AU." During the normal course change period a student may change registration in course audit from one course to another, or to regular enrollment in the course, or from regular enrollment to course audit. Normally, no further registration in course audit will be permitted after the extended course change period has ended. For information on fees assessed for course audit refer to Undergraduate Fees.

Note: Course audit and special audit are for different categories of students. Those interested in gaining entry as special audit students should consult the Continuing Studies section.

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. As a condition of registration, all students are required to have approved hospital and medical insurance coverage. Student who seek medical treatment through either the University Health Services or off-campus medical facilities are required to provide evidence of medical insurance. Failure to provide adequate information will result in the student being charged directly for services rendered. It is important for students to remember that while we in BC take health care for granted, under the Medical Services Plan of BC those who do not have medical coverage will bear the costs, which can be expensive. Adequate medical and hospital insurance is any plan, government or private, which is recognized in BC.

Questions regarding hospital or medical insurance should be directed to the Medical Services Plan of BC, telephone (604) 683-7151 (toll free).

Students who are not citizens or permanent residents of Canada should contact a private insurance company for coverage during the waiting period to obtain the Medical Services Plan coverage. For information on available private medical plans, contact the Centre for International Students, telephone 778.782.4232.
Program/Course Changes and Withdrawals

Program Changes
Program changes to academic goal, or to honors, major or minor subject declarations or intentions may be entered for necessary departmental approval on the Program Approval form available from the major department or the Office of the Registrar.

Course Changes
You are urged to read the tuition refund policy carefully to avoid, or minimize, financial penalty for dropping courses for which you register. Details of the policy, and deadlines, appear in the Undergraduate Fees section of the Calendar and, also in the Course Timetable and Registration Instructions. 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.

Semester Course Changes
The Course Timetable and Registration Instructions that is published each semester contains detailed instruction on the procedures, and semester specific deadline dates to be followed, to change courses during the registration process and after the start of classes. The deadline dates may vary for the Intersession and Summer Session.

Summer session and Intersession course changes
For information concerning course changes in the Intersession and Summer session, refer to the Summer semester Course Timetable and Registration Instructions.

Normal course change period
Regular Semester - Class Days 1-5
Courses may be added or dropped or tutorial times changed using the telephone registration 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 registration in course challenge from one course to another, or to regular enrollment in the course.

Registration for course audit and course challenge is not available by telephone registration; registration and course changes must be done in person at the department offering the course.

Extended course change period
Regular Semester - Class Day 6-15
After the fifth day of classes to the 15th day of classes, 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 notation on the student's academic record. However, if a student drops all courses for the semester, the withdrawal will be noted on the academic record. A student may not withdraw from course challenge without substitution of a regular course enrollment. During the first ten days of classes, he/she may change registration in course challenge from one course to another, or to regular enrollment in the course. Permission of the department is required.

Course drop period
Regular Semester - Class Days 16-25
No courses can be added or changed to audit status after the fifteenth day of classes.

After the 15th day of classes to the 25th day of classes, courses may be dropped without prior approval of the department offering the course when the course is dropped via the telephone registration system. Courses dropped within this period will be automatically recorded with a WD notation on the student's academic record. If a course is dropped under extenuating circumstances, the approval of the chair and instructor is required, and the notation will be WE rather than WD.

During the sixth to twelfth week of classes a course may be dropped only in extenuating circumstances. There will be a notation WE on the student's academic record for specific courses dropped. These drops require the approval of the instructor and the Chair. No courses may be dropped after the twelfth week of classes.
Note: Extenuating circumstances are defined as unusual circumstances beyond the student's control which make it impossible for the student to complete the course.

Withdrawals from the University
Students wishing to withdraw from all courses in a semester must refer to the Course Timetable and Registration Instructions published each semester for the procedures to be followed.

Once official notification of withdrawal has been received and accepted, official records will be updated to record the date on which withdrawal from the semester was effected. The date of withdrawal for students who withdraw after the fifth day of classes will be recorded on the student's academic record.

Identity/Library Cards
A student identity/library card is provided to registered students. This card is required when borrowing books from the Library and for other on-campus identification purposes. Students must retain expired cards for re-validation at the start of the next semester in which they register. In the event that this card is lost, destroyed or damaged, a replacement card may be obtained from the Office of the Registrar upon payment of a fee.

Student Responsibility
A student will be expected to fulfill the requirements and write the examinations in all courses for which he/she is registered after the date shown in the Course Timetable and Registration Instructions as the last date to drop courses. It is the student's responsibility to ensure that the Office of the Registrar has the proper information regarding courses in which the student is registered. Except in cases of illness, or for compassionate reasons, failure to write the examination constitutes a failure in the course.

A student may receive credit for only the courses in which he/she is officially registered according to the Registrar's records.

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.

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 which could be considered to constitute academic dishonesty: plagiarism (presenting the work of another person as your own); submitting the same work more than once unless prior approval has been obtained; 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 T10.02 available in the Library or any departmental office, or on the Campus Wide Information System (gopher://gopher.sfu.ca:70/11/sfu-general-info/policy-procedures/teaching/t10).
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 to the University, forfeiture of University 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 behaviour. 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 behaviours which would be considered to constitute misconduct: disruptive or dangerous behaviour; behaviour 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 T10.01 available in the Library or any departmental office, or on the Campus Wide Information System (gopher://gopher.sfu.ca:70/11/sfu-general-info/policy-procedures/teaching/t10).

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.

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 (Policy T10.03) and in the policy establishing the Senate Committee on Disciplinary Appeals (Policy T10.04) respectively. These policies are available in the Library or any departmental office, or on the Campus Wide Information System (gopher://gopher.sfu.ca:70/11/sfu-general-info/policy-procedures/teaching/t10).

Examinations
Final examinations for courses that require them will normally be held during the last two weeks of each semester. Dates of the examination period for each semester are outlined in the Academic Calendar of Events and in the Course Timetable and Registration Instructions published each semester. The final examination schedule is contained within the Course Timetable and Registration Instructions which is mailed each semester to students eligible to register.

Each student is expected to participate in work assigned during the semester. The marks obtained for work during the semester may be used in determining the final standing for the course. A passing grade in any examination does not ensure a passing grade for the course.

Students who miss examinations because of illness or for compassionate reasons are required to obtain a physician's certificate or other supporting documents in order to obtain consideration in the course. Such documents must be filed with the Department Chair or Registrar within four days of the date on which the examination was to have been written.

A student may not re-write (or write, in the case of receiving an N grade) a paper unless he/she re-registers for the course and participates in the course as required by the instructor.

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.
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.

Grades

Scale
The student is awarded a final grade at the end of the semester for each credit course. The grade for each course will be entered on the student's record by a letter grade and a numerical equivalent as follows.

- A+, 4.33; A, 4.00; A-, 3.67 = Excellent performance
- B+, 3.33; B, 3.00; B-, 2.67 = Good performance
- C+, 2.33; C, 2.00 = Satisfactory performance
- C-, 1.67; D, 1.00 = Marginal performance
- F, 0.00 = Unsatisfactory performance (Fail)
- AE = Aegrotat standing; compassionate pass. No numerical equivalent
- AU = Audit No numerical equivalent
- CC = Course Challenge No numerical equivalent
- CR = Credit without grade No numerical equivalent
- DE 0.00 = Deferred grade 0.00
- GN = Grade not reported No numerical equivalent
- N 0.00 = Did not write final examination or otherwise complete course 0.00
- P = Satisfactory performance or better (pass, ungraded). No numerical equivalent
- W = Withdrawn No numerical equivalent

Note: Credit is granted for A+, A, A-, B+, B, B-, C+, C, C-, P, D, CC, AE, CR. No credit is granted for F, N, DE, W, AU.

Scale Changes
In the first two semesters (65-3, 66-1), A- and C+ grades were awarded; these grades were discontinued with the third (66-2) semester, as was the T (Standing Granted) grade. The grades of A- and C+ were re-established with the 67-3 semester.

Prior to Fall semester 1979, numerical equivalents assigned to grades differed from those given above as follows: A+ and A- = 4.00; B+ and B- = 3.00; C+ and C- = 2.00.

Explanation of Grades/Notations

AE Grades
Aegrotat standing (AE) in an incomplete course may be awarded on medical or compassionate grounds by the Registrar acting on the recommendation of the instructor or Chair of the Department concerned when written evidence is submitted to substantiate a request for such standing and when the course requirements for credit have been substantially fulfilled. This evidence normally must be received by the Registrar or department within 96 hours of a scheduled final examination or within 96 hours of the last day of lectures of the semester for which such standing is requested. Courses for which Aegrotat standing is awarded are not included in the calculation of grade point average.

CC Grades
A student who has been registered for a course challenge is subject to an assessment equivalent to the final examination for the course plus an interview which may include an oral and/or practical examination, all to be arranged and approved by the Chair of the Department concerned. Departments are free to hold course challenge examinations at any time during the semester after the formal period of registration for course challenge. A performance equivalent to a grade of C or higher in the course is required for a successful course challenge.

The department concerned must submit a report to the Registrar on or before the last day for submission of regular grades in the course for that semester indicating the final disposition for the course challenge in the semester. 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 of academic record and statements of standing with the entry CC in the grade column and with credit
shown. At the end of semester, unsuccessful or unattempted results will not appear on transcripts of academic record or statements of standing but will be held by the Office of the Registrar in internal records.

The grade of CC has no numerical equivalent and is not included in the calculation of grade point average. The grade of CC may not be applied in any way toward application for scholarships, bursaries or loans.

**CR Grades**
The grade of CR has no numerical equivalent and is not included in the GPA calculation. The grade of CR may be assigned in certain special cases.

**DE Grades**
The letter grade DE will be given when a physician's certificate or other document substantiating a request for deferment on medical or compassionate grounds is received by the Registrar or the Chair of the Department concerned within four days of the date from which the final examination was to have been written, or when the instructor in the course wishes to defer submitting a final mark pending completion of further work by the student. To be awarded, the letter grade DE must be submitted by the instructor and approved by the Chair. All unchanged deferred grades will be converted automatically to F after the fifth day of classes of the semester immediately following the one in which the grade was awarded. In exceptional cases, an extension may be granted on petition by the Department Chair.

**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 semester grade point average or cumulative grade point averages. The dean of the faculty responsible for the course shall advise the Registrar, in writing, that the notation GN is approved for a course or for a particular group of students in a course.

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

A student receiving grade N must re-register for the course and participate in the course again, as required by the instructor, in order to achieve a different evaluation for the course.

**P and W Grades**
The grades of P and W have no numerical equivalent and do not affect either semester grade point average or cumulative grade point averages. The designation W will be given when a student withdraws (or is withdrawn) after the course drop period for a course graded on a pass (P) or withdrawn (W) basis.

**WD and WE Notations**
The notations WD and WE are not grades and do not affect either the semester grade point average or cumulative grade point averages. The notation WD identifies a course freely dropped by the student during weeks 4 and 5 of a semester. The notation WE identifies a course dropped by the student under extenuating circumstances normally during week 6 through to the end of week 12 of a semester. Extenuating circumstances are defined as unusual circumstances beyond the student's control which make it impossible for the course to be completed. Different time periods are in effect for Intersession and Summer Session. (For more complete details refer to the Registration section.) For semester specific dates, refer to the Course Timetable and Registration Instructions.

**Credit for the Semester**
All credit earned will be granted, regardless of the grade point average for the semester. Credit may be granted for a specific course once only. Where a student repeats a course, the course(s) with the lower grade will be recorded on official records as a duplicate course. In the event that the same grade is earned for a repeated course, the course completed most recently is recorded on the official records as the duplicate. Repeated courses for which no grades have yet been assigned (i.e., courses in progress) will be recorded as duplicates until a final grade is awarded which is higher than the grade previously earned. Duplicate courses remain on the official record, and are included in the calculation of the semester grade point average. The cumulative grade point
average computed for semesters completed prior to the Fall semester 1979 includes duplicate courses. Duplicate courses are not included in the grade point average when it is computed for graduation purposes.

Reconsideration of Grades
Students who intend to appeal a course grade are cautioned that failing grades have been checked very carefully and appeals seldom result in higher grades except where a clerical error has occurred.

Students who feel that there has been an error in arriving at or recording a grade should apply in writing for reconsideration to the instructor, who will advise the Chair of the Department, who will then notify the Registrar of the final decision. The Registrar will communicate this decision to the student. All course grade changes require the approval and initial of the Department Chair before being submitted to the Registrar.

Course grade changes will be permitted up to, but not beyond, the fifth day of classes of the semester immediately following the one in which the grade is awarded. In special cases, an exception may be granted on petition by the Chair of the Department of the course concerned.

Statement of Grades
A statement of grades is mailed to each registered student in good financial standing with the University at the end of the semester. Official grades will not be released by the Office of the Registrar to students prior to the mailing time but instructors may release information on individual student grades to the students concerned at the end of the semester. Errors or omissions in the statement of grades will be adjusted and notifications provided to the student as early as practicable.

Information concerning final grades is not released to unauthorized persons without written consent of the student.

Grade Point Averages
The semester grade point average (GPA) is a method of expressing the student's performance for the semester as a numerical average. Each letter grade (except grades P, W, CC, AU, AE and CR) is assigned a numerical equivalent, which is then multiplied by the semester hour 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.

Semester grade point average is computed by dividing the total number of grade points earned by the total number of semester hours taken in the semester (excepting those semester hours assigned to courses with a final grade of P, W, CC, AU, AE, or CR).

The cumulative grade point average (CGPA) expresses performance as a numerical average for all semesters completed and is closed in the semester in which a degree or diploma is awarded to a student by the 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 number of grade points earned to date by the total number of semester hours undertaken to date, with the exception of those courses assigned a final grade of P, W, CC, AU, AE or CR. The CGPA calculated for semesters completed prior to the Fall semester 1979 includes duplicate courses.

Duplicate courses repeated in the Fall 1979 or thereafter and which have been assigned a final grade equal to or lower than the grade previously assigned are excluded from the calculation of the CGPA for the semester in which the course was repeated as well as any subsequent semester completed. If, on the other hand, a higher grade is achieved in the course when repeated, the duplicate course(s) with the lower grade(s) will be excluded from the CGPA for the most recent semester and any subsequent semesters completed. However, the lower grade is reflected in the CGPA calculated for each semester up to the semester in which the higher grade was achieved.

The upper division grade point average is calculated by dividing the total number of grade points earned in upper division courses by the total number of semester credit hours assigned for those courses, counting only the higher grade in courses that have been duplicated.

Standing Required for Continuance
All students at Simon Fraser University are expected to maintain acceptable standards of scholarship. Specifically, they are expected to maintain a minimum 2.00 CGPA. A student who does not maintain this minimum CGPA will be considered to be
performing unsatisfactorily in his/her studies. Regulations are applied to obtain reasonable equitability between transfer and non-transfer students. The following procedures will apply for evaluating student performance in accordance with the policy governing continuance, withdrawal and readmission.

- academic performance will be evaluated on courses for which Simon Fraser University grades have been assigned. ("Assigned grades" will include grades A+ through to D, F, DE, and N, but will exclude P, W, CR, AE, CC, GN and AU)
- following admission, no formal assessment will take place until the student has completed a minimum of 9 semester hours of assigned grades
- transfer students who were admitted to the University under the "Special Entry" category with an admission average below 2.00 and who have attempted 9 or more semester hours of transfer credit will be admitted on academic probation

Repeated Withdrawals
Students who withdraw from all courses in three consecutive semesters will be ineligible to re-register.

Ineligible to Re-register
A student with a CGPA average of less than 1.0 in two consecutive semesters, or with only N or F grades in two consecutive semesters, will be ineligible to re-register.

Academic Probation
A student who has received assigned grades for at least 9 Simon Fraser University semester hours will be placed on academic probation if the CGPA average earned is lower than 2.00.

During the probation period, the student must complete a minimum of 9 Simon Fraser University semester hours of assigned grades before re-assessment will occur. A student on academic probation may not repeat a course for which a grade of C or higher has been assigned. A student on academic probation may not register in a course overload.

If at the end of the probation period,

- the grade point average on assigned grades during the probation period and the CGPA average (CGPA) are 2.00 or higher, the student will be considered to be in good academic standing
- the grade point average on assigned grades during the probation period is 2.00 or higher, but the CGPA is less than 2.00, the student will continue on academic probation
- the grade point average on assigned grades during the probation period is less than 2.00, but the CGPA is 2.00 or higher, the student will continue on academic probation. (This could apply to students repeating courses during the probation period.)
- both the grade point average on assigned grades during the probation period and the CGPA are less than 2.00, the student will be required to withdraw (RTW) from the University

Required to Withdraw
After receiving Simon Fraser University assigned grades for at least 18 semester hours (9 if admitted on academic probation), a student may be required to withdraw (RTW) after being placed on academic probation.

Extended Withdrawal
A student must have received Simon Fraser University assigned grades for at least 27 semester hours (or 27 semester hours and transfer credits combined). A student may be placed on extended withdrawal (EW) after first having been required to withdraw (RTW) and then readmitted.

Readmission of Involuntarily Withdrawn Students
Former students who have been involuntarily withdrawn from Simon Fraser University (required to withdraw, ineligible to re-register, or placed on extended withdrawal) will be considered for readmission based on the amount (semester hours of credit) and quality of performance achieved (GPA) in academic coursework completed after the student last registered at Simon Fraser University.
Required to Withdraw or Ineligible to Re-register Students

Former students who are required to withdraw (RTW) or ineligible to re-register (ING) (i.e. CGPA of less than 1.0 in two consecutive semesters) will be eligible for readmission if they complete further transferable academic work according to the following schedule (any of the following five options):

- 12-17 semester hours with a minimum 3.50 GPA
- 18-23 semester hours with a minimum 3.00 GPA
- 24-29 semester hours with a minimum 2.75 GPA or with the acceptance GPA,* whichever is higher
- 30 or more semester hours with the acceptance GPA*
- a completed 2 year technical diploma with a 70% minimum average and at least 12 semester hours of transferable course work with a minimum 2.75 GPA. (The transferable work may be within the diploma program or supplementary to it.)

Extended Withdrawal Students

Former students who are on extended withdrawal (EW) will be eligible for readmission if they complete further transferable academic work according to the following schedule (any of the following five options).

- 24-35 semester hours with a minimum 3.50 GPA
- 36-47 semester hours with a minimum 3.00 GPA
- 49-59 semester hours with a minimum 2.75 GPA or with the acceptance GPA,* whichever is higher
- 60 or more semester hours with the acceptance GPA*
- a completed 2 year technical diploma with a 70% minimum average and at least 24 semester hours of transferable coursework with a minimum 2.75 GPA. (The transferable work may be within the diploma program or supplementary to it.)

Ineligible to Re-register Students

Former students who are ineligible to re-register (INF - only N or F grades in two consecutive semesters) or withdraw voluntarily (INW in three consecutive semesters) whose Simon Fraser University CGPAs are below 2.00, will be eligible for readmission on the same basis as required to withdraw (RTW) and ineligible to re-register (ING) former students (see above). If their CGPAs are 2.00 or higher, they will be eligible for readmission if they complete at least 3 semester hours of further transferable work at a minimum 2.00 GPA.

*The acceptance GPA refers to the minimum GPA in effect for the semester which must be met by BC College transfer students, according to enrollment limitation measures. Due to enrollment limits, this acceptance GPA may vary.

Deadlines

Deadlines for consideration will be the same as for other students seeking readmission. Decisions will be mailed or applicants will be phoned, depending on the date of the decision.

Duplicate Courses

Duplicate courses (repeated attempts at courses which have been passed prior to leaving Simon Fraser University, with a grade of C or higher) will not count in the credit hour or GPA calculations in readmission cases.

Final Grades Evaluated

Assessment will be based only on final grades (i.e., courses in progress will not be evaluated).

Transfer Credit

Credit for transferable courses will be granted on readmission, subject to a C minimum grade in each course, and subject to normal transfer credit limits. Letters of permission will not be issued to students who are not in good academic standing.

Standing on Readmission

If readmitted, students will be placed on academic probation and will be subject to the conditions described above. If both the CGPA and the GPA on assigned grades are below 2.00 at the end of the probation period, the student will be placed on extended withdrawal (EW) or required to withdraw (RTW), as appropriate.
Academic Alert
Students whose semester GPAs fall below 2.00, but who are not on any of the above academic standings, will receive an "Academic Alert" notification and will be advised to seek counselling at the Academic Resource Office.

Student Appeals
For graduate student appeals, see 1.16 of the Graduate General Regulations.

Students may appeal certain University decisions as follows.

Grades
May be appealed to the instructor, Department Chair and, in some cases, Faculty Dean in accordance with Academic Policy T20.01.

Course Drops
If a department denies permission to drop a course, students may appeal this decision to the Senate Appeals Board. This procedure is also followed for course drops after the extended course drop period (i.e., week 12). See Senate Appeals Board below.

Admission and Readmission
Decisions may be reviewed by the Director of Admissions.

Appeals for readmission may be considered by the Senate Appeals Board. See Senate Appeals Board below.

Assignment of Transfer Credit
Decisions may be reviewed by the Director of Admissions.

Appeals for revision to transfer credit may be considered by the Senate Appeals Board. See Senate Appeals Board below.

Tuition Fee Refunds
Appeals may be considered by the Registration Appeals Committee.

Academic Penalties (e.g., Suspension)
Dispute about the findings of fact may be brought to the University Board on Student Discipline (Policy T10.03). Appeals on three grounds may be brought to the Senate Committee on Disciplinary Appeals (Policy T10.04):

   a) that there was unfairness in the process at the hearing
   b) that the penalty imposed was inappropriate
   c) 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 Enrollment Program or Faculty
Appeals may be considered by the appropriate chair, director or Dean.

Procedure
Senate Appeals Board
Secretary: Director, Admissions Office of the Registrar The Senate Appeals Board considers cases wherein an individual feels aggrieved by the decision of the Registrar to apply a particular admission, readmission, standing, or credit transfer policy in his or her specific case, when special circumstances are present. An applicant, student or former student who disagrees with a decision of the Office of the Registrar has the right to appeal this decision. Grounds for appeal must be specified in writing.

University Board on Student Discipline procedures are found in T10.03. Senate Committee on Disciplinary Appeals procedures are found in T10.04.
Grounds for Appeal
Special circumstances are limited to documented significant physical or psychological distress, or serious mis-advice or improper administration by authorized university personnel with evidence that the appellant's studies were adversely affected. The Board will assess cases based on the evidence submitted, both written and oral, the academic record of the appellant and probable actions of a hypothetical "reasonable person" who might encounter circumstances similar to those encountered by the appellant. Appeals based on dissatisfaction with University policy, or disagreements concerning the evaluation of admissibility (e.g., GPA calculation, questions concerning English proficiency, etc.) or failure to meet published deadlines will not constitute special circumstances.

Leave to Appeal
The Chair and Secretary of the Senate Appeals Board will jointly decide whether or not an appeal goes forward for consideration, based on the presence or lack of special circumstances. The relative strength of any special circumstances will be judged by the full Board. An appellant may re-submit an appeal for consideration only if new information is presented. If special circumstances are present, the appeal will be submitted to the Board for consideration at its next meeting.

Stage 1 - Written Submissions Considered
All appeals which go forward to the Board will be reviewed in two stages. In stage 1, the written documentation will be reviewed. The Board will decide cases in which
• the appellant requests an in-person hearing appeal but the Senate Appeals Boards considers that the written material presented is sufficient for a positive decision.

All other cases will be deferred until a later meeting for a stage 2 hearing.

Stage 2 - In-person Hearings
Appellants will be contacted by the secretary and asked to appear at a scheduled Senate Appeals Board meeting. At the hearing, the appellant and/or her/his representative may provide information orally and answer questions posed by members of the Senate Appeals Board. Decisions will normally be released shortly after the hearing.

Decision Review Process
Regardless of whether or not there are grounds for an appeal, the Director of Admissions shall authorize a review of any admission, readmission or transfer credit decision which has been questioned or disputed. This review shall not constitute an appeal. A negative review decision shall not prejudice a subsequent appeal; the purpose of a review is to check decisions for accuracy and consistency.

The other committees mentioned above may be contacted through the following offices.

Registration Appeals Committee
Director, Records and Registration
Office of the Registrar

Senate Committee on Academic Discipline
Registrar
Office of the Registrar

University Board on Student Discipline
Secretary to the University Board on Student Discipline
Office of the Vice-President, Academic

Senate Committee on Disciplinary Appeals
Secretary to the Senate Committee on Disciplinary Appeals
Office of the Registrar
**Undergraduate Fees**

The Board of Governors reserves the right to change the schedule of fees and refunds without notice. Full details will be published in the Course Timetable and Registration Instructions.

**Semester Tuition Fee Schedule 1995/96**

Basic Differential Tuition Fee / Per Semester Hour Tuition Fee for International Students

Normal credit - $77.00 / $231.00

Course Challenge - $77.00 / $231.00

Audit - $38.50 / $115.50

Semester fee Co-op Practicum - $310.00 / na

Subject to the notes below, and to the Graduate Fee Schedule:

1. The Basic Tuition Fee Schedule applies to each undergraduate student who registers to undertake 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 semester that he or she is either a citizen of Canada or has the status of a permanent resident of Canada.

2. The International Students’ Differential Tuition Fee Schedule applies to each undergraduate student who registers 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 semester that 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 registered 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 the University and who registers 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 the University and who registers for such work. Those in (a) and (b) are assessed fees under the Graduate Tuition Fee Schedule but if they have obtained approval to undertake some undergraduate course work supplementary to program they will be assessed tuition fees according to the Basic Tuition Fee Schedule for such work.

5. Persons aged sixty or more years at the commencement of a semester are exempt from undergraduate tuition fees.

Simon Fraser University assesses undergraduate tuition fees in accordance with a schedule of fees based primarily on the number of semester hours of credit in which the student enrolls.

Various special fees may be assessed by the University in certain circumstances or for specific purposes.

Fees are not transferable from one semester to another.

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 Registration Appeals Committee.

Appeals must concern the current or the immediately preceding semester. Normally, appeals related to earlier semesters will not be accepted. Appeals should be submitted to the Office of the Registrar.
Intersession and Summer Session

Tuition Fee Schedules
For students registered in any combination of 8-week or 16-week courses, tuition fees will be assessed per semester hour of credit as shown in the semester tuition fee schedule.

Student Activity Fee
A student activity fee authorized by the Board of Governors is collected from all students enrolled in courses for credit with the exception that persons aged sixty or more years are exempt from this fee, as well as students taking courses for audit purposes only.

Student Activity Fee Schedule
The student activity fee will be $52 for students registered for credit courses except for students registered in:

- students aged sixty years or more - $0
- audit courses only - $0
- three or fewer course hours for credit - $26.50
- designated "off-campus" courses only - $26.50
- summer session courses only - $26.50
- intersession courses only - $26.50
- any combination of Intersession/Summer session/Summer semester - $52.00

For a breakdown of the student activity fee, refer to the Simon Fraser Student Society in the Academic and Campus Services section of this Calendar.

Athletic-Recreation Fee
The Athletic-Recreation fee will be $30 for students registered in credit courses, except:

- students aged sixty years or more - $0
- audit courses only - $0
- designated "off-campus" courses only - $0
- three or fewer semester hours for credit - $15
- intersession courses only - $15
- summer session courses only - $15
- any combination of Intersession/Summer session/Summer semester - $30

Special Fees
Application Fee - $20

Award of Certificate or Diploma - $20
(persons aged sixty or more years are exempt from this fee)

Documents Evaluation Fee - $25

This non-refundable fee is assessed for applicants whose academic records originate outside BC, and are required for admission, transfer credit or advance standing. The fee is waived if the documents originate from a secondary school located in Canada or if the applicant is participating in an exchange program between Simon Fraser University and another institution.

- Graduation - $35
  (persons aged sixty or more years are exempt from this fee)
- ID/Library Card Replacement Fee - $5
- Late Application to Graduate - $20
Transcripts of Academic Record, each - $2

Normally, students are required to submit the transcript fee before the transcript request will be processed. Only at the discretion of the Registrar will the student be billed for a transcript after its release.

Replacement for an original degree, diploma or certificate parchment - $20

**Student Services Fee**

The Student Services fee is collected from full-time and part-time students registered for courses at the Burnaby Mountain and/or Harbour Centre campuses.

Student Services Fee - $18

**Other Fees**

These may include fees for materials, field trips and deposit fees as the Board of Governors, from time to time, may designate.

**Payment of Fees**

Fees may be paid through any branch of the Bank of Montreal free of charge. The bank requires the completed payment form before accepting payment.

If fees are mailed or paid directly to the University, cheques and money orders should be made payable to Simon Fraser University. The student number must be clearly written on the front of the cheque or money order.

Payment of fees in cash must be made at the Cashier's Office, at Harbour Centre, or at any branch of the Bank of Montreal.

When making payment by mail, do not to mail cash because the University does not accept responsibility for payments lost in the mail.

**Payment of the Confirmation Deposit - New Students**

New students must pay a non-refundable confirmation deposit of $100 to confirm acceptance of the offer of admission to undergraduate studies given by the University. Students aged sixty years or more are not required to pay this deposit.

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

Students registering for their first semester at the University are not required to pay the Registration Tuition Deposit.

**Payment of the Registration Tuition Deposit -**

**Continuing Students**

Continuing students registering for their second or subsequent semester are required to pay a registration tuition deposit of $100. Payment must be received at the Cashier's Office or paid at any branch of the Bank of Montreal before a student will be given access to the Telephone Registration System to select courses. Students must pay the registration tuition deposit at least five working days prior to attempting to register for classes.

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

Payment of the deposit is considered by the University to be a commitment by a student to attend the semester.

Payment of the deposit cannot be deferred. Students eligible for any awards or sponsorships will receive a refund from the Cashier's Office when the appropriate credits are received and processed.

Passport to Education vouchers from the Province of British Columbia may be submitted as payment of the registration tuition deposit.

Students eligible for tuition fee waivers or holders of Faculty of Education tuition fee certificates may submit the properly completed forms and the amount of the student activity fee and athletic fee as registration tuition deposit.
Payment of the Balance of Assessed Fees
The deadline for payment of the balance of fees is published in the Course Timetable and Registration Instructions distributed each semester. Credit for scholarships and bursaries will be given only on the authority of the Financial Assistance Office.

Cancellation of Registration
The tuition refund policy described below will be applied when registration is cancelled. Courses will not be cancelled for non-payment of outstanding fees and grades based on incomplete or no work completed will be assigned.

Refunds
When students who are registered in credit courses reduce the number of courses in which they registered, 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 Semester and Intersession (May-June)
Space in Simon Fraser courses is limited. Tuition refunds and penalties as outlined below are designed to discourage a student from holding space in course(s) which the student eventually decides not to take.

The telephone registration system monitors course drops by taking "snapshots" of the number of courses (net course load) in which each student is registered. Penalties are assessed on decreases in net course load, not on semester hours of credit. The exact dates of "snapshots" are published each semester in the Course Timetable and Registration Instructions under the heading Fees and Refunds, subhead Tuition Refunds. However, the general dates of the three "snapshots" taken are: first, approximately one week after all students have been given access to telephone registration; 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 if the course was dropped before the end of week one, and $100 if 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
Students in bad financial standing because of overdue accounts with the University will be precluded from registering in subsequent semesters. In addition, the University will withhold certain services. For example, the Office of the Registrar will not release various letters and documents including: statement of grades, official transcripts of academic record, and parchments for degrees, diplomas and certificates.

Students with overdue accounts will be assessed a penalty of 2% after the first day of the fifth week of classes, and an additional 2% in each four week period thereafter. A minimum charge of $10 will apply to each penalty assessment. Total penalties will be adjusted to conform to Canadian laws and regulations when the final payment is made.

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 semester to another and the required fee must accompany each application.

Financial Assistance and Awards

Financial Assistance
Location: 3017 Academic Quadrangle
Telephone: (604) 294-8600 Registrar Information Service (Touch Tone service only)
778.782.3892 general enquiries, 778.782.4722 Fax
Introduction
Students are eligible for a variety of financial assistance programs including entrance or continuing scholarships, bursaries, awards, and loans. These programs are administered by one of three agencies: Simon Fraser University, an external organization, or a government.

General information and regulations
The following regulations apply generally to all types of financial assistance.

- All scholarships, bursaries and awards are given on the recommendation of the Senate Undergraduate Awards Adjudication Committee. Decisions of the Committee, when announced, are final.
- The University does not guarantee the payment of any scholarships, bursaries or awards listed in this Calendar other than those provided directly from funds of the University.
- 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 student is responsible for knowing the deadlines for applications for the various scholarships, bursaries and awards.
- 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.
- Any regulations which apply to a specific category of financial assistance are given within that particular subsection.

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
Simon Fraser University Bursaries
Private Bursaries
Private Awards
University Awards
Canada Student Loan/BC Student Assistance Program

Students re-entering Simon Fraser University may apply for:

Scholarships for continuing students
Private Bursaries
Simon Fraser University Bursaries
Private Awards
University Awards
Canada Student Loans/BC Student Loan and Assistance Program

Deadlines
Unless an award specifies a particular date, the deadlines are as follows.

University Administered Programs
Entrance Scholarships: April 15
Scholarships for continuing students: end of week 2 of classes
Bursaries: end of week 4 of classes

Externally Administered Programs
See the specific award for deadlines.

Government Administered Programs
Government Student loans at least 8 weeks before semester
University Administered Programs

Entrance Scholarships
University administered Scholarships for Continuing Students
University administered Private/Endowment Scholarships for Continuing Students
University administered Bursaries
University administered Awards
University administered Loans

Externally Administered Programs

Externally administered Entrance Scholarships
Externally administered Scholarships for Continuing Students
Externally administered Bursaries
Externally administered Awards
Externally administered Loans and Funds

Government administered Programs

University administered Entrance Scholarships
Location: Office of the Registrar, Strand Hall
Telephone: 778.782.3224 general enquiries, 778.782.4969 Fax

Entrance scholarships for BC Secondary School students
Entrance scholarships for Canadian High School students
Entrance scholarships for BC College students

The University is pleased to award entrance scholarships to outstanding students from across Canada. Our Entrance Scholarship Program recognizes the exceptional academic and community achievements of students attending British Columbia Secondary Schools, Canadian High Schools, and British Columbia Colleges.

The scholarships described below reflect our program as it currently exists. For complete descriptions and information applicable to students entering the University in the Fall of 1996, please refer to the Entrance Scholarship brochure and application material, available in January 1996.

All scholarship applicants should have high academic standing. BC secondary school applicants may have to prepare more than one application package, depending on the number and type of scholarships they wish to apply for. Please read carefully the "application requirements" sections in the scholarship brochure.

Applicants must be Canadian citizens or Permanent Residents to qualify for all Simon Fraser University Entrance Scholarships. Students holding ongoing Entrance Scholarships do not qualify for the Simon Fraser University Open Undergraduate Scholarship or private scholarships administered by the University. Students holding Entrance Scholarships may not terminate their Entrance Scholarship in favour of the Simon Fraser University Open Undergraduate Scholarship. They may, however, become eligible for the Open Scholarship once the Entrance Scholarship is fully paid out.

For BC Secondary School Students

$30,000 Simon Fraser Scholarship
Recognizes excellent academic performance and potential. Distributed over 8 semesters.

$25,000 Simon Fraser Alumni Leadership Scholarship
Recognizes extraordinary leadership, community service, and citizenship while achieving high academic standing. Distributed over 8 semesters.

$20,000 Gordon M. Shrum Scholarships
Recognize high academic standing and a commitment to school and community service, leadership, volunteer activity, music, the arts, or athletics. Distributed over 8 semesters.
$3,000 Jack Diamond Scholarships
Recognize academic and athletic excellence. Distributed over 2 semesters. See notes 1, 6, and 10. Potential candidates for the Jack Diamond Scholarships are identified by Simon Fraser University, and nominated by our Director of Athletics. For further information, contact Liaison and Awards.

$3,000 BC Regional Summit Scholarships
Recognize academic excellence of students from each BC college region. Distributed over 2 semesters.

$3,000 Summit Scholarships
Recognize academic excellence. Distributed over 2 semesters.

$3,000 Tadeusz Specht Memorial Scholarship in Applied Science
Recognizes academic merit. Awarded to students entering the Faculty of Applied Sciences and pursuing studies in the fields of kinesiology or other health-related sciences. Distributed over 2 semesters.

$3,000 Tadeusz Specht Memorial Scholarship in Science
Recognizes academic merit. Awarded to students entering the Faculty of Science and pursuing studies in the fields of biology, microbiology, chemistry or other health-related sciences. Distributed over 2 semesters.

$2,500 Stanley Morisse Memorial Scholarship
Recognizes academic merit. Applicants whose admission qualifications were completed in Greece or Cyprus are encouraged to apply. Distributed over 2 semesters.

$6,000 Dean's Scholarships
Dean's Scholarships of $6,000 are awarded within each of the faculties of Applied Sciences, Arts, Business Administration, and Science, to recognize academic promise in a particular area of study. Distributed over 4 semesters.

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.

For Canadian High School Students
Note: that BC secondary school students are not eligible for Canadian high school Entrance Scholarships.

$20,000 Gordon M. Shrum National Scholarships
Recognize high academic standing and commitment to school and community service, volunteer activity, music, arts, or athletics. Distributed over 8 semesters. Scholarship also has one-time $2,000 travel allowance.

The $3,000 Kenneth Strand National Scholarships
Recognize academic excellence. Distributed over 2 semesters. Scholarship also has one-time $1,000 travel allowance. See notes 1 and 5.

The $3,000 Jack Diamond National Entrance Scholarships
Recognize academic and athletic excellence. Distributed over 2 semesters. Scholarship also has one-time $1,000 travel allowance. Potential candidates for the Jack Diamond Scholarships are identified by Simon Fraser University, and nominated by our Director of Athletics. For further information, contact Liaison and Awards.

$3,000 Tadeusz Specht Memorial Scholarship in Applied Science
Recognizes academic merit. Awarded to students entering the Faculty of Applied Sciences and pursuing studies in the fields of kinesiology or other health-related sciences. Distributed over 2 semesters.

$3,000 Tadeusz Specht Memorial Scholarship in Science
Recognizes academic merit. Awarded to students entering the Faculty of Science and pursuing studies in the fields of biology, microbiology, chemistry or other health-related sciences. Distributed over 2 semesters.
For BC College Students

$10,000 Honourable William M. Hamilton Scholarships
Recognize high academic achievement and leadership potential. Distributed over 4 semesters.

The $3,000 Ken Caple Scholarships
Recognize outstanding academic performance. Distributed over 2 semesters.

BC College scholarship application deadlines:
April 15, 1995 for admission to the 1995 Summer or Fall semesters.

November 26, 1995 for admission to the 1996 Spring Semester.

$2,500 Stanley Morisse Memorial Scholarship
Recognizes academic merit. Applicants whose admission qualifications were completed in Greece or Cyprus are encouraged to apply. Distributed over 2 semesters.

Other Entrance Scholarships

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 semesters pending interest income from the Endowment Fund. Applicants must have graduated from Columbia College and be registered 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 Assistance at Simon Fraser by May 30th.

Mona F. East Memorial Entrance Scholarship
This fund provides a scholarship annually for the student who is 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.

Daniel Janzen Memorial Scholarship
This scholarship, equal in value to the accrued interest, will be awarded to an undergraduate student who is transferring to Simon Fraser from Fraser Valley College. Preference will be given to a student who is pursuing studies in Economics and/or Business Administration. The scholarship is based on academic merit and applicants must have a minimum CGPA of 3.33 (B+) at Fraser Valley College. Please provide a copy of your transcript along with your scholarship application.

University administered Scholarships for Continuing Students

University scholarships for all students
University scholarships for Arts students
University scholarships for student athletes

Regulations
Unless otherwise stated, the following regulations apply to all University administered scholarships.

- A minimum 3.50 CGPA is required to be eligible for a scholarship.
- The student must be registered in a minimum of 9 credit hours of normal graded courses in the semester of eligibility. Challenge, audit, and non-credit courses will not be considered.
- The student needs to have completed at least one semester at the University to be considered for most private scholarships.
- The application deadline for scholarships is the last day of week 2 of classes in each semester.
- A student holding an ongoing Simon Fraser University entrance scholarship is not eligible for private scholarships or a Simon Fraser University Open Scholarship until the entrance scholarship is fully paid out.
University scholarships for all students

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

Eligibility
To qualify, a student must have the following.

- a minimum Simon Fraser University cumulative grade point average of at least 3.60, with the eligible CGPA set according to the availability of funds. The threshold CGPA will be set as low as permitted by the availability of funds. (For the 1994/95 academic year, the minimum CGPA for eligibility was set at 3.75.)
- a minimum semester GPA of 3.5 in the last semester of registration
- been registered in one of the last three semesters
- completed at least 24 credit hours of normally graded courses over their last three semesters of registration in such courses. For students who fall short of the 24 credit hour requirement because one semester’s registration was in a single course of 5 credits or less, the last four semesters will be considered, and that semester of one course will be set aside in determining credit hour and semester GPA eligibility.

All eligibility requirements must be met.

Monetary Value
The scholarship is equal to the actual tuition costs accrued for normally-graded courses in the semester of eligibility, and excludes student fees, athletic and other service fees.

PDP students in EDUC 401/402 or EDUC 405 will be notified if they are eligible.

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).

Visa students are eligible on the same basis as other students. However, the value of the scholarship will be calculated at the Basic Tuition Fee rate.

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

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

University scholarships for Arts students

School for the Contemporary Arts Scholarship
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 an ability to be self-motivated and self-directed in extra curricular activities at Simon Fraser University or in the community at large.

This award is valued at $2,000 (disbursed over two semesters). A 3.5 cumulative grade point average is required to receive and maintain the scholarship and full time registration must be maintained during the tenure of the Scholarship. Further eligibility
requires at least 48 graded credit hours at Simon Fraser University, a declared major and acceptance by the School for the Contemporary Arts.

University scholarships for student athletes

Simon Fraser University Athletic Scholarships

Two athletic scholarships valued at $1,000 each (i.e. disbursed in two $500 instalments) are available to students who demonstrate outstanding and sustained athletic performance. A minimum cumulative grade point average of 3.50 is required based on completion of 60 credit hours at Simon Fraser University. Other considerations will also be given to a student who:

- is an outstanding member of an intercollegiate team;
- exemplifies leadership qualities;
- contributes to the enhancement of the athletic specialty of involvement.

The second disbursement of the scholarship will be subject to a student maintaining a 3.50 GPA and registration in 12 credit hours.

University administered Private/Endowment Scholarships for Continuing Students

Private scholarships for all students
Private scholarships for Applied Sciences students
Private scholarships for Arts students
Private scholarships for Business Administration students
Private scholarships for Education students
Private scholarships for Science students

The following scholarships have been made possible by generous donations. To apply for the following scholarships, students must complete the Simon Fraser University Private Scholarship Application form, available in Financial Assistance. Unless otherwise noted, the same regulations apply as for University administered Scholarships for Continuing Students.

Private scholarships for all students

Hy Aisenstat Scholarship
Three scholarships, valued at $2,500 each, are available annually to undergraduate students with experience in the hospitality industry who are returning to University. Please document eligibility.

Alumni Scholarship and Bursary Endowment Fund
Scholarships valued up to $500 are available from a portion of the earned interest to undergraduate students. Students must meet the minimum scholarship regulations.

BC Telephone Company Scholarships
Two $750 Scholarships are awarded in the Spring semester to undergraduate students, from any discipline, who are in their second, third or fourth year of study. The scholarships will be awarded on the basis of scholastic ability and community involvement either at Simon Fraser University or elsewhere. Both criteria must be clearly indicated by documentation. Preference will be given to Canadian citizens or permanent residents.

Hong Kong University BC Alumni Fund
An annual scholarship, from a portion of the earned interest, is available annually to a Co-op student in any faculty who is doing their work placement in Hong Kong. This award is intended to offset travel and/or living expenses for the period of time (not exceeding one year) spent in Hong Kong. A departmental recommendation is required from the Co-operative Education Program Director.
Hughes Aircraft Native Indian Scholarship
A $750 scholarship will be awarded annually in the Fall semester. The award will be given to a native undergraduate student with high academic standing at Simon Fraser University. Preference will be given to students majoring in Engineering Science, Computing Science, Mathematics, Physics or Business Administration.

India Club Scholarship
An annual scholarship of $250 is available to a student with high academic standing in any level of undergraduate study at Simon Fraser University in any faculty.

Japanese-Canadian Centennial Scholarship
A scholarship for $750 will be awarded in the Fall semester to a Japanese-Canadian student residing in British Columbia and enrolled in the first year of study at Simon Fraser. 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.

Howie Larke Sport Information
A scholarship is available annually in the Fall semester from a portion of the accrued interest to a full time undergraduate student involved in sport information. The scholarship will be based on academic merit.

Marcia Scholarship in Electroacoustics
A $250 scholarship is available in the Spring semester 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/recommendation is required.

Joseph and Rosalie Segal Scholarship
Award(s) of approximately $800 are available annually (in the Fall semester) to students with good academic records, and demonstrated service to the University or the community. The awards will be open to students in any faculty who have completed at least 60 credit hours of study.

Trans Mountain Pipeline Company Ltd
Two annual scholarships, valued at $1,000 each, are available in the Fall and Spring Semester, and will be awarded to undergraduate students in any Faculty based on academic merit. The application should include a résumé and letter from the student outlining their interest in, and career plans concerning, environmental science and technology or environmental protection.

Private scholarships for Applied Sciences students
Association of Professional Engineers and Geoscientists
A scholarship, valued at $1,000 will be awarded annually 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 a BC university of community college.

Paul CotŽ Endowment Scholarship in Engineering
This scholarship, established by the Board of Governors, which is equal in value to the accrued interest, is available annually in the Spring semester to an Engineering Science student registered in the Faculty of Applied Science. The scholarship will be awarded on the basis of high academic performance to a student who has completed at least 60 credit hours at Simon Fraser University.

CREO Electronics Corporation Scholarship
A $500 scholarship is available annually in the Spring semester to Engineering Science students in the Faculty of Applied Science, who have successfully completed at least one year. Students will require a recommendation 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.
Hughes Aircraft of Canada Limited
An annual scholarship of $750 is available in the Fall semester to an undergraduate student with high academic standing who is entering or in their third year of Engineering Science, Computing Science or Management and Systems Science at Simon Fraser University.

Ken and Su Jang Scholarship for Women in Science
An annual scholarship, valued at a portion of the accrued interest, is available in the Fall semester to an undergraduate female student in the Faculty of Applied Sciences or the Faculty of Science. The award will be based on academic merit.

Motorola Wireless Data Group
A scholarship valued at $1,500 will be available to an undergraduate student. The scholarship will be disbursed in two equal instalments.

Preference will be given to students in Computing Science who have a data communications orientation. While scholarship will be the primary factor for the adjudication of the award consideration may be given to the student's financial need.

Fred and Elaine Moonen Scholarship in Communication
A scholarship valued at approximately $2,000 is available annually in the Fall semester to a student who is majoring in Communication and who is entering or in the fourth year of the Communication program.

MPR Teltech Limited Scholarship
A scholarship of $1,000 is awarded in the Fall semester to a third or fourth year Computing Science or Engineering Science student who can demonstrate academic excellence. The scholarship will alternate each year, beginning in Fall 1985; the first award to an Engineering Science student.

Nexus Engineering Scholarship Fund
Up to two $500 scholarships are available annually in the Fall semester to upper level Engineering Science students whose studies include high frequency electronics and related disciplines. High academic achievement and a recommendation from the applicable department is required.

J. Newton Robinson Memorial Scholarship Endowment Fund
This endowment has been established in memory of J. Newton Robinson, former member of the Simon Fraser University Board of Governors. A scholarship, in the amount of the accrued interest, will be available in the Fall semester to a Computing Science major, who has completed 60 credit hours at Simon Fraser. The scholarship will be based upon academic performance.

Paul and Helen Trussell Science Scholarship Fund
One scholarship valued at $20,000 (payable at $5,000 annually for four consecutive years) will be awarded annually 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 Landed Immigrant, 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 Masters 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 credit hours of graded course work each semester during tenure of the scholarship and maintain a 75% average. Contact Financial Assistance for further information.

University Publishers Scholarship
A $200 scholarship is available annually to the student in Engineering Science who prepares the best work term report of the year. A departmental recommendation is required.

Vancouver Stock Exchange Scholarship
A $1,500 scholarship will be awarded in the Fall semester to a Co-op student entering their graduating year with a major in Computing Science or the Management and Systems Science Program with a demonstrated interest in business. If the student is in Computing Science, the student should have a minor in Business Administration or a double major in Computing Science and
Business Administration, or a joint major in Business and Computing Science. A statement confirming an interest in business should accompany the application/nomination.

**Private scholarships for Arts students**

Mary Batchelor Memorial Scholarship
A scholarship of approximately $700 will be awarded annually in the Spring semester to a student in the Psychology major or honors program. Selection by the Psychology Department will be based upon academic achievement and extracurricular involvement. Applicants must have completed at least 60 credit hours, of which 30 hours are of Simon Fraser University course work, and must also include a resume with their applications.

Arthur and Eva Bell Award in Business Administration and Economics
Two awards of $500 each will be made in the Fall semester to students in 2nd, 3rd or 4th year of Business Administration and 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.

Linda Brideau Memorial Scholarship
An annual scholarship, equal in value to the interest accrued is available 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.

Eaton Marketing Scholarship
A scholarship of $650 will be available annually in the Spring semester to a student in their third or fourth year of work in Business Administration and/or Economics leading to a BA or BBA degree with an emphasis or interest in marketing, or, in the absence of such a candidate, to a graduate student whose work lies in the area of marketing.

Edwards, Edwards, Edwards and Maskall Scholarship
A scholarship in the amount of $500, has been established by Mr. James H. Edwards and is to be made annually in the Spring semester to an outstanding student in the Faculty of Arts who will be attending law school upon completing their BA degree.

Father Michael Bach Memorial Endowment Fund
Friends, relatives and colleagues of the late Father Michael Bach have established an endowment fund to support one or more scholarships in the Humanities minor program.

One or more scholarships of approximately $1,000 each, based upon interest accrued from the endowment, will be awarded in the Fall semester to an undergraduate student enrolled in either the third or fourth year for the Humanities Minor program. The award will be made by the Senate Undergraduate Awards Adjudication Committee on the recommendation of the department in recognition of outstanding scholastic ability.

Mahatma Gandhi Humanitarian Scholarship
An annual scholarship, valued at $300, is offered in the Fall semester by Dr. and Mrs. Devendra P. Goel to a student who has demonstrated overall excellence in the Humanities program. Applications must be submitted with a recommendation from the Director of the Humanities Program.

Dr. Alfredo E. Hurtado Memorial Scholarship
An annual scholarship is available, equal in value to the accrued interest, will be awarded to an undergraduate student majoring in Spanish and/or Latin American Studies.

Lorne M. Kendall Memorial Scholarship in Psychology
This scholarship, equal to the amount of the accrued interest, is awarded in the Spring semester to the 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 Psychology Department. The recipient will be selected by the Chair of the Department, after consultation with the Chair of the Undergraduate and Graduate Studies Committees.
Evelyn Lett Scholarship
An annual scholarship of $800 is available in the Spring semester to a full time female student enrolled in the Women's Studies program minor, certificate, post baccalaureate diploma and/or joint major programs. Preference will be given to those students who have contributed to the department and/or to women's issues on campus or in the community. Please submit a letter outlining your contribution along with the application.

Jerry and Belle Lundie Memorial Scholarship
Two scholarships of $500 each will be awarded annually in the Spring semester, 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 or students who demonstrate financial need. 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.

Margaret J. Menzel Memorial Scholarship
A $1,000 tuition scholarship will be awarded in the Spring semester to a single parent enrolled in the Women’s Studies program, on the basis of academic achievement. The Women’s Studies co-ordinator will forward nomination(s) to Financial Assistance.

Robbie Robertson Scholarship
The Prince George branch of the Royal Canadian Legion will award annually a $1,000 scholarship to a student registered 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.

John Stell Sykes Scholarship Endowment
A scholarship, equal to the value of the accrued interest, will be awarded annually in the Spring semester 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.

Private scholarships for Business Administration students

Keith and Betty Beedie Scholarship
An annual scholarship, valued at a portion of the accrued interest, will be awarded in the Fall semester 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 and Economics
Two awards of $500 each will be made in the Fall semester to students in 2nd, 3rd or 4th year of Business Administration and 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.

CGA Continuing Education Scholarship
The Certified General Accountants Association of BC annually offers two scholarships to graduates of the Business Administration program at Simon Fraser University.

The scholarships are equivalent in value to the students' first year's tuition on the CGA program (approximately $1,000) and are tenable only with the Certified General Accountants Association of BC.

Students who intend to continue their education with the CGA program should make formal application to Financial Assistance and the department.

Chevron Canada Ltd Scholarship
An annual scholarship, from a portion of the accrued interest, is available in the Fall semester 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. A departmental letter of recommendation must be submitted with the application form from a Dean or Department Chair.

Cloverdale Paint Incorporated Scholarship
A scholarship, valued at a portion of earned interest, will be awarded in the Spring semester 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 performance.

Culver and Company Scholarship
A $1,000 scholarship is available in the Spring semester on the basis of academic performance in at least six of the following Business Administration courses: BUS 237, 320, 321, 324, 329, 362, 420, 421, 424, 426, 427, and 428. Students may only receive the scholarship once in their academic careers. The scholarship will be issued on the basis of nominations received from the Faculty of Business Administration.

Deloitte Touche Scholarship
Three scholarships valued at $400 each will be awarded annually. The award will be given each semester to a student enrolled in BUS 421-3 (Accounting Theory), who attains the highest grade in the course. If there is a tie for the highest grade in a given semester, the donor will award both students the scholarship. Recommendation from the Dean, Faculty of Business Administration is required.

Certified Management Accountants Society of BC-William C.C. Easton Scholarship
Certified Management Accountants Society of BC - William C.C. Easton BA, CAE, FCMA, scholarship has been established in appreciation of Mr. Easton's contribution to the society, to the profession, and to the community. This annual scholarship of $1,000 will be awarded to the student with the highest academic standing in Business Administration courses 324 and 424.

Eaton Marketing Scholarship
A scholarship of $650 will be available annually in the Spring semester to a student in their third or fourth year of Business Administration and/or Economics leading to a BA or BBA degree with an emphasis or interest in marketing, or, in the absence of such a candidate, to a graduate student whose work lies in the area of marketing.

Financial Executives Institute Scholarship
The Financial Executives Institute Scholarship provides an annual scholarship valued at $1,000. The scholarship will be given in the Fall semester 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.

Honourable William M. Hamilton Memorial Scholarship
The Hon. William M. Hamilton Scholarships are available from a portion of earned interest, in the Fall or Spring semesters. The scholarship is based on academic merit and will be awarded to an undergraduate student who is entering the Faculty of Business Administration upon completion of 30 credit hours. A departmental nomination/recommendation is required.

Human Resources Management Association
A $1,000 scholarship is available in the Fall Semester to a Business Administration student who has completed 90 or more credit hours (at least 30 at Simon Fraser University). The applicant will have completed three of the following four courses: BUS 372, 374, BUEC 384 and/or 385 and be registered in the following courses: BUS 481 or 482 during the tenure of the award. The cumulative grade point average in the above courses and potential contributions to the Human Resources Management Profession will be the primary consideration of the award. A departmental recommendation is required.

ICABC Desmond O'Brien Memorial Scholarship
One award, valued at $1,500, will be given annually in the Spring semester to a full-time undergraduate student in the Faculty of Business Administration. The student must have completed 75 to 105 semester credit hours inclusive, including the semester of application, and must have at least 6 semester hours of accounting courses. The award will be based upon the academic performance of a student who is also financially deserving.

Students should apply directly to the undergraduate program office in the Faculty of Business Administration.
Maria Kuchar Accounting Scholarship
An annual scholarship, equal in value to the accrued interest is available in the Fall semester to a third or fourth year undergraduate student who is majoring in Accounting. The scholarship is also based on academic excellence and full-time registration.

Robert H. Lee Scholarship in Business Administration
An annual scholarship, equal in value to the accrued interest, is available in the Fall semester 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
Two scholarships of $500 each will be awarded annually in the Spring semester, 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 or students who demonstrate financial need. 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.

KPMG Peat Marwick Thorne Scholarship
This scholarship will be awarded annually to an accounting student in the Faculty of Business Administration entering the final year of study who anticipates embarking on a career in chartered accountancy. Applicants are required to have a high academic standing and, upon graduation, have completed the course offerings required for entry into the CA program. The recipient must be a Canadian resident and legally able to accept employment in Canada. The scholarship consists of three components.

- Tuition fee payment for the final two semesters (eight months) of study at Simon Fraser University.
- Offer of employment with the company (New Westminster office) for one semester (four months) during the final year.
- Cash award of $1,000.

Wolrige Mahon Scholarship in Accounting
Two scholarships valued at $750 each, are available annually to undergraduate students in the Faculty of Business Administration accounting field of study who are entering or in their final year of a degree program. Applicants must be anticipating embarking on a career in chartered accountancy. Academic excellence is required with particular emphasis on ability, aptitude and entrepreneurial qualities necessary to become a successful chartered accountant. A departmental nomination/recommendation is required.

Gil Moser Scholarship
The scholarship, equal in value to the accrued interest available from the Gil Moser Endowment Fund, will be awarded annually in the Spring semester to a full time student in the Faculty of Business Administration on the basis of high academic standing and on the recommendation of the Faculty of Business Administration. This endowment fund has been established in memory of the late Gil Moser who served Simon Fraser University on its Board of Governors.

Phillips, Hager & North Ltd Scholarship
An annual scholarship of $1,000 will be awarded in the Fall semester to an undergraduate third or fourth year student within the Faculty of Business Administration. The scholarship is based on academic merit.

Shell Canada Limited Scholarship in Business Administration
A scholarship, valued at approximately $900, is available to a full-time undergraduate student enrolled in the Co-op Program of the Faculty of Business Administration. A recommendation/nomination is required from the Business Administration Co-op Program.

Grant Wilson Memorial Scholarship
This endowment fund has been established in memory of Grant Wilson by Stanley Pharmaceuticals Limited of North Vancouver, BC. A scholarship, equal in value to the accrued interest, will be available annually to a BC student in the Faculty of Business Administration who is entering the final two semesters of study at Simon Fraser. The applicant must be planning to enter Law school. A departmental nomination is required from the Dean of Business Administration.
Lorraine Wintrup Memorial Endowment Scholarship
An endowment fund has been established in memory of Mrs. Lorraine Wintrup. A scholarship equal in value to the accrued interest is available annually in the Spring semester 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
An annual scholarship, equal in value to a portion of the accrued interest, is available to an undergraduate student in Business Administration who shows a significant improvement in academic studies. A departmental recommendation nomination is required.

Private scholarships for Education students

Carol Chapman Memorial Education Scholarship
An annual scholarship, equal in value to the accrued interest is available in the Fall semester, to a full time student in the Faculty of Education's Professional Development Program, who has demonstrated high academic achievement.

Madge Hogarth Scholarships in Education
Mrs. Madge Hogarth has established two scholarships equal in value to the accrued interest to be awarded annually at the beginning of the Summer semester. One scholarship will be awarded to a student who has completed EDUC 401/402 and is proceeding to EDUC 404. The second scholarship will be awarded to a student who has completed EDUC 405. Academic standing prior to entry into the Professional Development Program will be the primary consideration, although teaching performance may be considered.

Private scholarships for Science students

Biological Sciences Merit Award
One scholarship equal in value to the interest accrued is awarded annually in the Fall semester upon recommendation of the Department of Biological Sciences. The award is available to a Biology major who has the highest academic record at the conclusion of the sixth semester of study or the equivalent thereof. A student may receive this award only once during their undergraduate career.

Dow Chemical Canada Inc. Chemistry Scholarship
An annual scholarship, valued at $500, is available to the top undergraduate chemistry major, who has completed second year with a full credit load (15 credits) in each semester in which the 200 level credits were obtained. Departmental nomination/recommendation is required.

Lionel Funt Scholarship
A $750 scholarship is available in the Fall semester to a student who is entering their final year of study in the chemical sciences. The sole basis of the award is academic merit, however participation in extracurricular activities will also be considered. A departmental recommendation and/or nomination from the Dean of Science of Chemistry departmental Chair is required along with the application.

Goel Memorial Scholarship
This scholarship has been established by Dr. and Mrs. D.P. Goel in memory of Mrs. Shakuntala Goel. This scholarship of $300 will be awarded annually in the Fall semester to a student who has demonstrated overall excellence in the Department of Mathematics and Statistics. Applications must be submitted with a recommendation from the Chair of Mathematics.

MacKenzie and Feimann Limited Scholarship
An annual scholarship, equal in value to the accrued interest, is available to a full-time undergraduate student who is registered 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 recommended for an NSERC Summer Research Scholarship.
William and Amelia McMahan Scholarships
Several scholarships will be awarded annually to students who are enrolled in full course programs in the Faculty of Science. All students who are in their second to fourth year of study and who have high academic standing will be considered. Preference will be given to students who are children of employees or former employees of the logging and pulp division of Canadian Forest Products Ltd. or its subsidiaries, affiliate companies or successors. In the event that no suitable candidates from the above are available, then children of persons engaged or formerly engaged in the logging or pulp industry in BC will be considered. Students must attach to the application form a resume including details of family service with the company and/or the industry.

Patrick Duncan McTaggart-Cowan Award in Physical Science
This scholarship fund was established in honor of Dr. Patrick Duncan McTaggart-Cowan. This fund will provide approximately $500 to 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.

Evelyn and Leigh Palmer Scholarship
A scholarship, equal in value to the accrued interest, is available in the Fall or Spring semester, to a student who has completed 60 credit hours towards a degree in the Physical Sciences and who has also accumulated 30 hours in the two most recent semesters.

Trans-Canada Pipelines Research Scholarship
This scholarship will be awarded to a student presently enrolled in a four year program leading to a BSc in Chemistry. The 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.

University Women's Club of Vancouver
An annual scholarship, equal in value to the accrued interest, is available 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.

Waterloo Maple Software Scholarship
Waterloo Maple Software offers an annual scholarship in the Fall semester to an outstanding third or fourth year student in mathematical sciences who is committed to continuing their education. The scholarship of $500 and a copy of Maple V software will be awarded by recommendation of the Department of Mathematics and Statistics and Waterloo Maple Software. Applications are due before December 1 each year.

Wyatt Company Scholarship
An annual scholarship, valued at approximately $1,700 is available in the Fall semester to a third or fourth year student in the Certificate Program in Actuarial Mathematics who has successfully completed ACMA 310. The scholarship will also be based on high academic merit. A departmental nomination/recommendation is required from the Chair of the Department or designate.

University administered Bursaries
University administered Private/Endowment Bursaries
Private bursaries for all students
Private bursaries for Applied Sciences students
Private bursaries for Arts students
Private bursaries for Business Administration students
Private bursaries for Education students
Private bursaries for Science students
Private bursaries for student athletes

Regulations

- Students must have a demonstrated financial need.
- Students must have a minimum CGPA of 2.00 to be eligible for bursaries.
• Students must be registered in a minimum of 9 semester hours of normal graded courses in the semester of application.
• Canadian citizens and Permanent Residents should apply for government assistance programs (e.g., Canada Student Loans, BC Student Loans, etc.) before applying for bursaries.
• All students must apply on Simon Fraser University Bursary applications.
• Deadline for application is the last day of week 4 of classes in each semester.

Simon Fraser University Open Bursaries
Students applying for a Simon Fraser University Open Bursary must be registered in a minimum of 9 credit hours and have satisfactory academic standing. Students may receive up to $800 per semester.

Simon Fraser University International Students' Emergency Assistance Fund
This fund has been established primarily to assist undergraduate visa students who have critical financial need. Students applying for this bursary must be registered in a minimum of 9 credit hours and have satisfactory academic standing. Students may receive up to $800 per semester.

Daycare Bursaries
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.

University administered Private/Endowment Bursaries
The following bursaries have been made possible by generous donations. Unless otherwise stated, the regulations are the same as those for University administered Bursaries.

Private bursaries for all students

Alumni Scholarship and Bursary Endowment Fund
Bursaries valued up to $500 are available to undergraduate and graduate students. The awards are based on financial need and satisfactory academic standing.

David Armstrong Memorial Bursary
An annual bursary, valued at a portion of the earned interest from the endowment, is available in the Fall semester to an undergraduate student in the Co-op program. The bursary is based on demonstrated financial need and satisfactory academic performance.

Bel-Par Industries Limited Bursary
An annual bursary, valued at $700, is available in the Fall semester to an undergraduate student in any faculty who has completed 12 credit hours at Simon Fraser. 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.

Birk Family Foundation Bursaries
The Birk 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.

L. Pierre Bonneau Memorial Bursary
Bursaries will be awarded annually in the Spring semester from the accrued interest to undergraduate students in any Faculty who have a satisfactory academic standing and financial need.
The Honourable Angelo E. Branca and Mrs. Branca Bursary Endowment Fund
In honor of the 50th wedding anniversary of the Honourable Angelo E. Branca and Mrs. Branca, and on the occasion of his retirement from the bench, a bursary endowment fund has been established by the following donors, to provide annual bursaries in perpetuity from the earned income. Confratellanza Italo - Canadese and friends
Mr. J. Diamond
Mr. J. Segal
Mr. Ben Wosk

Bursaries valued approximately at one semester'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 semester's tuition are available to students from any faculty, who have a minimum of 60 credit hours at Simon Fraser University, have maintained satisfactory standing, and are in financial need.

Burnaby New-Westminster Women's Club
In memory of Caroline Velichko, a former member of the Burnaby-New Westminster Business and Professional Women's Club, a $500 bursary is available annually in the Fall semester. This award will be given to a mature female student who has continued her education after several years' absence, and who has completed sixty credits with satisfactory academic performance as well as being a BC resident.

Burrard Charitable Foundation Bursary
A $500 bursary is available in the Fall semester to a student with any physical disability. Adjudication will occur in consultation with the Physically Challenged Students' Co-ordinator.

Harvey and Dorothy Burt Bursary Endowment Fund
One or more bursaries will be awarded from the accrued interest of this endowment fund in the Fall semester of 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
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. Bursaries up to the amount of $125.00 per child per month are available to student, staff and faculty parents who require some assistance with their daycare fees. Further information may be obtained from the Simon Fraser University Childcare Office.

Mr and Mrs Leslie Chu Bursary
An annual bursary, valued at a portion of the earned interest, is available in the Fall semester 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.

CKNW Orphans' Fund Endowment Bursary
An annual bursary valued at a portion of the accrued interest (disbursed in 2 equal instalments) is available to an entering student from 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 4 academic years provided the recipient maintains a 2.00 grade point average and registers in 9 credit hours 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.
Confratellanza Italo Canadese Bursary Endowment Fund
Bursaries are available to undergraduate students with financial need and satisfactory academic standing. Preference will be given to Italo-Canadian students if they meet the criteria.

De Jong/MacDonald Bursary
An annual bursary, equal in value to the accrued interest, is available in the Fall semester to an undergraduate student in any faculty who has a satisfactory academic record and demonstrates financial need. A short brief outlining dedication to community involvement should accompany the application.

Father Della-Torre Bursary Endowment Fund
A Bursary Endowment Fund has been established in honor of Father Della-Torre for his 27 years of pastorship at the Sacred Heart Church, Vancouver. This fund will provide annual bursaries in perpetuity from the earned income.

Entering students: Bursaries valued approximately at one semester'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 semester's tuition are available to students in any faculty, who have a minimum of 60 credit hours at Simon Fraser University, have maintained satisfactory academic standing and are in financial need.

Alex W. Fisher Bursary
A bursary, equal to the accrued interest donated by Mr. Alex W. Fisher, will be awarded in the Spring semester to a hard-working and deserving male student in need of financial assistance.

Lois M. Fisher Bursary
A bursary, equal to the accrued interest donated by Mr. Alex W. Fisher, will be awarded in the Spring semester to a hard-working and deserving female student in need of financial assistance.

Arthur Fouks 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. A $1,000 bursary will be awarded annually to a full-time third year student planning to study law. Please provide a brief concerning your eligibility for this bursary.

William Gordon Memorial Bursary
An annual bursary, equal in value to the accrued interest, is available in the Fall semester to an undergraduate student in any faculty or discipline who has completed 12 credit hours at Simon Fraser. The student must have a satisfactory academic standing and demonstrate financial need.

Dr. Ben Gullison Bursary
This bursary is available to second, third or fourth year students in any discipline or faculty undergraduate program. In recognition of Dr. Gullison's work, evidence of community service will be considered in making the award.

Hamber Foundation
A gift from the Hamber Foundation is used to grant bursaries to women students with satisfactory academic standing and need for financial assistance.

Madge Hogarth Bursaries
Two bursaries are available annually in the Fall semester to undergraduate students 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
An annual bursary is available 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.
Carma Israel Bursary Endowment Fund
An endowment fund in memory of Carma Israel has been established by Mrs. Katherine Leshgold. The interest income is to provide an annual bursary on the basis of financial need.

Ken and Su Jang Entrance Bursary
An annual bursary, valued at a portion of the accrued interest, is available in the Fall semester to an entering student who demonstrates financial need and who has a satisfactory academic record prior to entrance to Simon Fraser University.

Charles Chan Kent Golden Wedding Bursaries
One bursary of $500, the gift of Charles Chan Kent Golden Wedding Scholarship and Charitable Foundation, is offered in the Fall or Spring semester 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’yith (Lions Gate Lodge 1716)
Two bursaries of $750 each are available in the Fall semester to undergraduate students, in any faculty, who have determined financial need and satisfactory academic standing.

Sue MacDonald Memorial Endowment Bursary
Two or more bursaries, valued at approximately $700, are available annually in any semester to undergraduate students in any faculty who have proven financial need and a satisfactory academic record.

Dorothy May Martin Endowment Bursary Fund
A number of bursaries are available 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.

John Michael McLarty Bursary
An annual bursary, valued at approximately $2,000, is available to an undergraduate student in any faculty who has completed at least 12 credit hours at Simon Fraser. 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 Endowment Fund
This fund, in memory of Jo-Ann Mychaluk who worked in the Centre for Distance Education, has been established to provide bursaries 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.

Office of the Registrar Bursary for Physically Challenged Students
One or more bursaries are available annually to a physically challenged undergraduate or graduate student in any Faculty. The bursaries will be granted to physically challenged students holding satisfactory academic records and who are experiencing financial need in the pursuit of studies.

Evelyn J. Oliver Bursary
One or more bursaries are available annually to undergraduate full time students who are single parents. Bursaries will be granted on the basis of demonstrated financial need and satisfactory academic performance in the continuing pursuit of studies.

Opsimath Club Bursary Endowment
A number of bursaries are available in any semester to continuing students at Simon Fraser University, who have financial need and good academic standing. The Opsimath Club is an organization of senior (60 years) students.

Stephen Palmu Memorial Bursary
A bursary of $100 a year has been established by Mrs. Mamie E. Palmu. Initial preference will be given to Native Indian students from anywhere in the Province of BC, who are pursuing courses of study leading to a Bachelors 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.
Permanent Bursary Endowment Plan
Applications must be submitted on the Simon Fraser University Bursary Application form under the heading "Permanent Bursary Endowment Plan"; these bursaries should not be listed individually. Permanent Bursary Endowments, to provide annual bursaries in perpetuity from the earned income, have been established by the following.

Belkin Packaging Limited Permanent Endowment Fund
Downs/Archambault
Ellen Mary Greenway
Gretta Bowmer Memorial
Estate of Hans Christiansen
Ted Cohen
Mark and Phae Collins Fund (Vancouver Foundation)
Jack Diamond Permanent Endowment Fund
Drop-in Centre Permanent Endowment Bursary
David A. Freeman
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

IODE Evelyn Price Memorial Bursary
A bursary, valued at approximately $1,000, is available annually to an undergraduate student who is in the final year of a degree program. Applicants must be Canadian citizens, be maintaining a satisfactory academic standing and be in financial need.

Rotary Club of Vancouver Community Service Bursary
A fund has been established to aid students in financial need with reasonable academic standing. Three bursaries of $500, applicable in any semester, are available.

Royal Commonwealth Society Bursary
An annual bursary of $500 is available for an international student from a Commonwealth country, who is in the final year of study, is in good academic standing, and has demonstrated financial need.

William and Jane Saywell Bursary
A $1,500 bursary is available annually in the Fall or Spring semester for a student who is a single parent and who has demonstrated a deep commitment to any field of study at Simon Fraser University and has financial need. A letter is required that outlines and discusses their extracurricular activities and interests that would demonstrate commitment to the chosen field of study.

Mrs. Rosalie Segal Endowment Fund for Students With Special Needs
This fund has been established to provide bursaries to physically challenged students. Up to five bursaries valued at approximately $500 minimum, will be awarded annually in the Fall and Spring semesters on the basis of financial need. Adjudication will occur in consultation with the Physically Challenged Students' Co-ordinator.

Stanley Sievenpiper Bursary Endowment Fund
In memory of Stanley Sievenpiper, this fund has been established to provide bursaries to be awarded annually in the Fall and Spring semester on the basis of financial need. Preference will be given to third and fourth year students.
Jennifer Allen Simons Bursary
An annual bursary is available in the Fall semester from the accrued interest, to an undergraduate or graduate woman student in any faculty. The bursary will be granted 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 semester at Simon Fraser University as a full-time student.

B and B Sivertz Bursary Endowment
Several bursaries are available annually to undergraduate students who demonstrate financial need and satisfactory academic performance, and who have completed 30 credit hours at Simon Fraser University.

Harry and Dora Annie Smee Bursary
The interest income from this endowment will provide up to three bursaries annually to students in any faculty who have completed at least 30 credit hours 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
An award of $300 will be made annually in any semester to a physically challenged student in any faculty who is beyond first year studies. Initial preference will be given to wheelchair users.

Simon Fraser University Bursary Endowment Fund
All undergraduates in financial need are eligible to apply for these bursaries. A minimum GPA of 2.00 is required.

Simon Fraser University Memorial Annual Fund
This fund was established at Simon Fraser University to receive donations from members of the community in memory of loved ones. Bursary awards will be granted from this fund in the name of the individual whose memory has been recognized by donors to Simon Fraser University. Awards will be based on satisfactory academic performance and demonstrated financial need.

Simon Fraser University 10th Anniversary Endowment Bursary Fund
This fund has been established to provide bursaries for students in financial need who maintain a GPA of 2.00.

Simon Fraser Student Society UCB Pub Bursaries
Several bursaries of up to $800 are available each semester for 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.

Dorothy Sullivan Bursary
An annual bursary, valued at a portion of the earned interest, is available 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.

Trans-Canada Glass International Incorporated Bursary
Two annual bursaries, valued up to $2,000 pending accrued interest, are available in the Fall semester to undergraduate students in any faculty who have completed 12 credit hours at Simon Fraser. The bursaries will be granted to students 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
An annual bursary, valued at a portion of the earned interest, is available 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.
University Women's Club of Coquitlam Bursary
An annual bursary is available in the Spring semester to a mature female student who is continuing her education after several years absence, and is in her first year of study.

University Women's Club of Vancouver
A $600 bursary is available to a woman 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 Municipal and Regional Employees Union Bursary
A bursary, to be awarded in three disbursements for three semesters, is available annually to sons, daughters, or legal dependants of members of the Vancouver Municipal and Regional Employees Union who, at the time of application, are current members or retired members of the Union, and who demonstrate a primary attachment to the VMREU by holding Union membership through a minimum of six months employment for each of the two years prior to the date of enrollment, or the last two years prior to retirement. The Bursary will be awarded by Simon Fraser University in consultation with the VMREU to a qualified applicant who is beginning or continuing full-time enrollment at Simon Fraser. The award is based on financial need and satisfactory academic standing in previous studies.

Note: Bursaries for members of the VMREU are administered entirely by the VMREU. VMREU members should apply for "Members Bursaries" directly to the Union.

Western Businesswomen's Association Bursary
An annual bursary, from a portion of the earned interest on the endowment, is available to an undergraduate student in the Fall semester. The bursary will be granted 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 woman student. The bursary will be based on satisfactory academic performance and demonstrated financial need. The award will include a one year's membership in the Western Businesswomen's Association as well as the opportunity to engage in the Association's mentorship program.

Private bursaries for Applied Sciences students

Canadian Federation of University Women - North Vancouver Bursary
A bursary of $500 will be awarded to a female undergraduate student who is enrolled in the Faculty of Science, Applied Science or Business Administration and who is either a resident of North Vancouver or a graduate of a North Vancouver Secondary School (School District #44).

Hugh Clark Memorial Bursary
An annual bursary, from a portion of the earned interest, is available in the Fall semester to a third or fourth year undergraduate student in Engineering Science. The award will be granted to a full-time student who is maintaining a satisfactory academic record, and demonstrated financial need.

Delcan Corporation Bursaries
The Delcan Corporation has established bursaries in memory of the contribution made by Mr. Joe Cunliffe, OC, to engineering in British Columbia. Up to two bursaries, with a value of at least $1,000 each, will be awarded annually in the Spring semester to undergraduate students registered full time at Simon Fraser University, in the faculties of Science or Applied Sciences.

It is the intention of the Delcan Corporation to promote socio-environmental research and studies relative to major civil engineering projects; to support opportunities for women to enter careers at the management level in engineering; to increase high technological input into civil engineering, and to promote superior written and oral communication skills.

Students will apply for these bursaries through Financial Assistance, and must include a letter of recommendation from the Office of the Dean of the major program.

Vancouver Foundation Health Science Bursaries
A number of awards ranging in value from $500 to $1,000 are available to full-time undergraduate and graduate students who have completed two years of post-secondary education. Areas of study include any of the following: Pre-Med program, Clinical
Psychology, Kinesiology, Bio-medical Engineering, and Gerontology. Awards are based upon financial need and good academic standing.

IODE Burnaby Municipal Chapter Bursary
Two bursaries, valued at approximately $1,000 each, are available annually in the Fall semester to third or fourth year students majoring in Science or Applied Science. Students must be Canadian citizens and graduates of Burnaby Senior Secondary School. Financial need and satisfactory academic standing is required.

Ralph Kerr Memorial Bursary Endowment Fund
This bursary fund has been established in memory of Ralph Kerr, a charter member of Simon Fraser University and a former employee of the Physics Department. Bursaries generated from the accrued interest of this fund will be available 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.

Pacific National Foundation Endowment Bursary
An annual bursary, equal in value to the accrued interest, is available in the Fall semester 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.

Professional Engineers of BC Hydro
Two annual bursaries, valued at $750 each, are available in the Fall semester to third and fourth year Engineering Science students who are in full-time studies with satisfactory academic standing and demonstrated financial need.

Sceptre Investment Counsel Ltd Bursary
An annual bursary is available from a portion of the earned interest from the endowment. The Bursary will be awarded to a second year undergraduate student in the Faculty of Science beginning in the 1995 Fall semester 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.

Sierra Systems Bursary in Computing Science
Two bursaries, valued at $2,500 each, are available in the Fall semester 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
An award will be given in the Fall semester to an undergraduate student majoring in Engineering Science. The bursary will be granted to a student holding a satisfactory academic record and experiencing financial need in the continuing pursuit of their studies. As well, special consideration will be given to the applicant's community involvement and citizenship; evidence thereof to be provided in an accompanying letter and/or supporting documents.

Private bursaries for Arts students

Aird Dundas Flavell Memorial Bursary
An annual bursary is available to a student who has completed at least 15 hours at Simon Fraser with a satisfactory academic standing and whose course of study is in the following areas: Political Science, Economics and/or Business Administration.

BC Sugar Refining Company Bursaries
Five bursaries valued at $500 each are available 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.
IODE Burquitlam Chapter
An annual bursary valued at $200 is available in the Spring semester to a second or third year undergraduate student in the field of Humanities who is studying towards a degree in the Faculty of Arts. As part of the criteria, the recipient must send the donor a note of appreciation for the award. Applicants must be Canadian citizens.

Adaline May Clark Bursary Permanent Endowment
The late Mrs. Clark has provided for the endowment of funds, with the interest generated there from to be used for bursaries to enable students to attend, or continue to attend university. An award or awards will be made annually.

Eligibility: Students must be registered in the School for the Contemporary Arts, and must demonstrate financial need and a high level of achievement in the Arts.

Dr. Ed Calhoun Memorial Bursary
An annual bursary, equal in value to the accrued interest, is available in the Fall semester to an undergraduate student in Spanish who is holding a satisfactory academic record and who demonstrates financial need.

Colonel Burnaby IODE Criminology Bursary
An annual bursary will be awarded in the Fall semester to a third or fourth year student enrolled in the Criminology Program who is a Canadian citizen. The award is also based on financial need and a satisfactory academic record.

Murray Farr Bursary in Performing Arts
A bursary, equal in value to accrued interest, is available annually to an undergraduate student in the School for the Contemporary Arts with a performing arts concentration.

Valerie Ann Kilby Memorial Bursary
An annual bursary, valued at a portion of the earned interest, is available in the Fall semester 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.

Keith G Loughlin Bursary
An annual bursary, from a portion of the interest earned from the endowment, is available in the Fall semester to an undergraduate student 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/recommendation is to be submitted along with the application form.

McCavour Family Bursary in Criminology
One or more bursaries, valued at a portion of the interest earned from the endowment, will be awarded annually. The award will be given in the Fall semester to an undergraduate student in Criminology who is a single parent. 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 another eligible student. The bursary will be granted on the basis of demonstrated financial need and satisfactory academic performance.

Lydia McCombie Memorial Bursary
An annual bursary, valued at a portion of the accrued interest, is available to an undergraduate student in the Faculty of Arts who has successfully completed English 372-4 (Creative Writing). The bursary will be granted on the basis of demonstrated financial need; satisfactory academic performance in 372-4 may be considered.

Bruce McKelvie Endowment Bursary Fund
An endowment fund has been established by the Native Sons of British Columbia, Post #2, for the purpose of establishing an annual bursary (of approximately $400) equivalent in value to the accrued interest. The bursary will be awarded annually in the Spring semester 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.

Robin Mercer Memorial Bursary
This bursary was established in memory of Robin Mercer, a former alumnus of Simon Fraser University in the Faculty of Arts. An annual bursary is available in the Fall semester to an undergraduate student who is majoring in Archaeology and who has a satisfactory academic record and in financial need.

Margaret M. Mitchell Bursary in Political Science
A bursary, valued at approximately $2,500 is provided from a portion of the earned interest. The bursary is available in the Fall semester 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 M. Mitchell Bursary in Women's Studies
A bursary, valued at approximately $2,500 from a portion of the earned interest, is available in the Fall semester. This bursary will be given to an undergraduate female student in second, third or fourth year who is minoring 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
A bursary will be granted biennially, from a portion of accrued interest, to an undergraduate student enrolled in the Latin American Studies Field School. One or more bursaries will be awarded on the basis of financial need and satisfactory academic standing. Departmental nomination-recommendation is required.

Helen Pitt Fund for Fine Arts (Vancouver Foundation)
Bursaries are available to third year students enrolled in full-time studies in Fine Arts programs, who demonstrate financial need and satisfactory academic standing. Preference will be given to Fine Arts students from Vernon, BC. The School for the Contemporary Arts forwards nominations to Financial Assistance.

Donald H.M. Ross Faculty of Arts Bursary
A bursary, valued at a portion of the earned interest, is available in the Fall semester 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.

Sceptre Investment Counsel Ltd Bursary
An annual bursary is available from a portion of the earned interest from the endowment. The Bursary will be awarded to a second year undergraduate student in the Faculty of Science beginning in the 1995 Fall semester 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.

Paul and Ethel Seifner Linguistics Bursaries
Up to five bursaries are available annually to undergraduate students pursuing a linguistics program who have satisfactory academic standing, demonstrated financial need, and have completed 15 credit hours at Simon Fraser.

Vancouver Foundation Health Science Bursaries
A number of awards ranging in value from $500 to $1,000 are available to full-time undergraduate and graduate students who have completed two years of post-secondary education. Areas of study include any of the following: Pre-Med program, Clinical Psychology and Kinesiology. Awards are based upon financial need and good academic standing.

Grace Woodsworth MacInnis Bursary
An annual bursary, from a portion of the interest earned from the endowment, is available 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 given to a woman student.
Private bursaries for Business Administration students

Keith and Betty Beedie Foundation
An annual bursary, valued at a portion of the accrued interest, will be awarded in the Fall semester 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.

BC Bond Dealers Association Bursary
An annual bursary, valued at a portion of the earned interest income is available to an undergraduate student in the Faculty of Business Administration whose area of concentration is Finance. The bursary will be granted on the basis of demonstrated financial need and a satisfactory academic record.

BC Sugar Refining Company Bursaries
Five bursaries valued at $500 each are available 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.

Connor, Clark & Lunn Bursary
An annual bursary, valued at $1,000, is available in the Fall semester to a third year full-time student in Business Administration with a concentration in International Business.

Maurice S. Dodge Memorial Bursary
In memory of Maurice S. Dodge, a former carpenter with the Burnaby School Board and resident of Burnaby, an annual bursary valued at $1,250 will be awarded to an undergraduate student who is in good academic standing and in financial need. The award will be given to a third or fourth year student majoring in Business Administration with an accounting or finance concentration.

Executive Women International Bursary
An annual bursary is available in the Fall semester to an undergraduate woman student who is enrolled in the Faculty of Business Administration in the third or fourth year of the program and who has a satisfactory academic record and financial need.

Aird Dundas Flavell Memorial Bursary
An annual bursary is available to a student who has completed at least 15 hours at Simon Fraser with a satisfactory academic standing and whose course of study is in the following areas: Political Science, Economics and/or Business Administration.

Pinkus and Chaia Huberman Foundation Bursary
An annual bursary is to be awarded annually to a needy and deserving student in the Faculty of Business Administration who has completed a minimum of one semester at Simon Fraser University.

Institute of Chartered Accountants of British Columbia, Simon Fraser University Co-operative Education Program Award
One award, valued at $750, will be given annually in the Spring semester, to a full-time undergraduate student enrolled in the Faculty of Business Administration Co-operative Education program (CA stream), on the basis of the nominations received from the Faculty of Business Administrations Co-operative Account program. The award will be based upon academic performance (consideration given to improved academic performance), reports of practicum work performance and the need for financial support.

Candidates should have completed at least one practicum work semester after being accepted into the Co-operative Education Program, before eligibility is determined.

Interville Development Ltd Bursary
An annual bursary of $1,000 is available in the Fall semester 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.
Investment Dealers Association of Canada
One bursary valued at $2,000 will be awarded annually in the Fall semester payable in two instalments, the second of which will be disbursed in the next semester of registration (Spring). The award will be given to a student in the Faculty of Business Administration with a Finance concentration who demonstrates financial need and who has a good academic standing.

Laing Property Endowment Fund Bursary
Bursaries, of approximately $1,000 are available annually in the Fall semester to full-time undergraduate students in the Faculty of Business Administration. The awards are based on financial need and satisfactory academic standing.

R.J. McMaster Memorial Bursary (Credit Union Foundation of BC)
A $500 bursary is available in the Spring semester 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.

J. Rose Memorial Bursary Fund
A $1,500 bursary is available in the Spring semester for 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. A departmental recommendation is required. This bursary is provided by the Vancouver Foundation.

Seaspan International Bursary
An annual bursary of $500 is available in the Fall semester to a student, approved as a major, in Business Administration, who has satisfactory academic standing and financial need.

Vancouver Executives Association Bursary
An annual bursary, valued at a portion of the accrued interest, is available 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.

Bing Sum Yip Bursary In Business Administration
An annual bursary, from a portion of the earned interest from the endowment, is available in the Fall semester 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
One or more bursaries, valued at a portion of the interest earned, will be awarded annually. The award(s) will be given in any semester to undergraduate women students in Business Administration who demonstrate satisfactory academic achievement and financial need.

Private bursaries for Education students

BC Teachers Credit Union Bursary
A bursary of $500 is available in the Fall or Spring semester for a student who is in a Bachelor of Education degree program, or who is enrolled in the Professional Development Program. Applicants must be members or sons and daughters of members of the BC Teachers Credit Union which should be clearly documented. A photograph will be required from the recipient.

May Bennett Bursary Endowment Fund
An endowment fund has been established in honor of May Bennett to provide annual bursaries 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 Bursary
An annual bursary, from a portion of the interest earned from the endowment, is available in the Fall or Spring semester 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.
Learning Disabilities Association of BC
An annual bursary of $200 will be available in the Fall semester to a student in the Faculty of Education working toward a minor in Learning Disabilities. Preference will be given to a graduate from the Delta School District.

Faculty of Education Special Bursary Fund Permanent Endowment
The Faculty of Education offers a bursary 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 semester. The bursary is awarded for the semester in which EDUC 405 is undertaken.

Sylvia R.H. Rice Memorial Bursary
An annual bursary is available to a first year student in PDP in the Faculty of Education. Satisfactory academic standing and demonstrated financial need is required.

Vancouver Elementary School Teachers Association Bursary
Two bursaries of $600 each, the gift of the Vancouver Elementary School Teachers' Association, are offered to students who are residents of Vancouver or 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.

- the Elizabeth Dobbins Memorial Bursary open to students entering third year in the Faculty of Education at Simon Fraser University
- the Owen J. Thomas Memorial Bursary open to students entering the fourth year in the Faculty of Education at Simon Fraser University

Private bursaries for Science students

BC Floral Art Society Bursary
The BC Floral Art Club offers an annual bursary in the Fall semester of $500 to a student of satisfactory academic standing in the third or fourth year of a program of studies concerned with plant science or general quality of the environment.

BC Sugar Refining Company Bursaries
Five bursaries valued at $500 each are available 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.

Delcan Corporation Bursaries
The Delcan Corporation has established bursaries in memory of the contribution made by Mr. Joe Cunliffe, OC, to engineering in British Columbia. Up to two bursaries, with a value of at least $1,000 each, will be awarded annually in the Spring semester to undergraduate students registered full time at Simon Fraser University, in the faculties of Science or Applied Sciences.

Digman Bursary
Bursaries are available for majors or honors students in Physics, Mathematical Physics, Chemical Physics, Biophysics or any other joint programs with Physics. These bursaries are subject to financial need and academic ability. Nominations will be made by the Chair of the Physics Department in consultation with Financial Assistance.

IODE Burnaby Municipal Chapter Bursary
Two bursaries, valued at approximately $1,000 each, are available annually in the Fall semester to third or fourth year students majoring in Science or Applied Science. Students must be Canadian citizens and graduates of Burnaby Senior Secondary School. Financial need and satisfactory academic standing is required.

Ralph Kerr Memorial Bursary Endowment Fund
This bursary fund has been established in memory of Ralph Kerr, a charter member of Simon Fraser University and a former employee of the Physics Department. Bursaries generated from the accrued interest of this fund will be available 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.
Margaret Lawson McTaggart-Cowan Alumni
An annual bursary of approximately $500 will be awarded to a woman student who is majoring in Mathematics and who has completed at least two full-time semesters at Simon Fraser University.

Sceptre Investment Counsel Ltd Bursary
An annual bursary is available from a portion of the earned interest from the endowment. The Bursary will be awarded to a second year undergraduate student in the Faculty of Science beginning in the 1995 Fall semester 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.

Ken Turner Memorial Endowment Fund Bursary
In memory of Ken Turner, a graduate of the Resource Management Program, a bursary representing the amount of interest generated annually from the endowment fund is available 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 Kimberley area if all other qualifications have been met. A departmental recommendation is also required.

Urea Formaldehyde Foam Insulation Action Association
Bursaries will be available annually in the Fall or Spring semester from the interest accrued from the Endowment established by the Association. Bursaries will be available to students who have completed at least 60 credit hours and who are studying in the areas of toxic chemicals or pollutants and their effects on human health and functioning. Please document eligibility.

Private bursaries for student athletes

Jonathan Mara Intramural Bursary
Three bursaries, valued at $500 each, are available annually in each semester to second, third and fourth year undergraduate students in any faculty, who have satisfactory academic standing and financial need. Applicants shall also be contributing time and energy to some aspect of the intramural program at Simon Fraser University. The application must include a letter of recommendation from the Intramural Manager/Co-ordinator.

Jane Norman Memorial Bursary
An annual bursary, equal in value to the accrued interest, is available in the Fall or Spring semester to an undergraduate student involved in the Simon Fraser soccer program. Awards are based on financial need and a satisfactory academic record. A recommendation is required from the Director of Athletics.

Sasview Triathlon Society Bursary
A bursary of approximately $500 will be awarded annually from the proceeds of the Triathlon. The award will be given in the Fall semester to an undergraduate student in any faculty who is participating in an intercollegiate sport as well as being in financial need and maintaining satisfactory academic standing.

University administered Awards

University awards for all students
University awards for Arts students
University awards for Education students
University awards for student athletes
University administered Private Awards
Private awards for all students
Private awards for Applied Sciences students
Private awards for Arts students
Private awards for Business Administration students
Private awards for Education students
Private awards for Science students
Private awards for student athletes

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.

In most cases, nominations are submitted directly to Financial Assistance. Both undergraduate and graduate students are eligible.

The following regulations apply to Awards.
• Students must have achieved a minimum CGPA of 2.0 during the semester of their contribution and must not be on Academic Probation, or in the case of first semester or transfer students, must possess an equivalent high school or college standing.
• Applicants who are graduate students must be registered for residence credit in an approved program.
• Candidates must submit an appropriate application form to Financial Assistance or be nominated by a member (or members) of the Simon Fraser University faculty, staff, or student body. Individuals nominating a student for an award also must file the required nomination form with Financial Assistance.
• Only one intervening semester will be allowed between the semester in which the registered student made their contributions and the semester in which the application is received in Financial Assistance.
• Remunerated or assigned activities such as financed research, course assignments, teaching duties, etc. are not considered, except where contributions are over and above usual expectations.

University awards for all students

Deans' Convocation Medals
A silver medal has been established for a graduating student from each faculty. The Dean of the respective faculty will recommend a student who is from the top 5% of graduating students within that faculty. The top 5% is defined by cumulative GPA. All nominations are to be forwarded to the Assistant to the Registrar.

Terry Fox Gold Medal
This medal may be awarded annually 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. This award includes a cash prize of $1,000 and three semesters’ tuition upon registration at Simon Fraser University. All nominations should be made directly to Financial Assistance.

Gordon M. Shrum Gold Medal
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 Bachelors degree during the preceding Summer, Fall or Spring semester.

Governor General's Silver Medal
A silver medal, presented by His Excellency, the Governor-General of Canada, 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 semester hours at Simon Fraser University.

The award shall be made to the student who has maintained a high scholastic standing during not fewer than six semesters or the equivalent of 60 semester hours 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.

Honor Roll
A limited number of students will be admitted each semester to the University Honor Roll, mainly on the basis of excellent work completed in the previous semester. 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 semester hours at Simon Fraser University by the end of the semester being evaluated
• must have completed at least 12 semester hours of credit in the semester being evaluated
• must achieve a minimum semester GPA of 4.00 calculated on all normally graded courses completed in the semester being evaluated.

C.D. Nelson Memorial Prize
In memory of Professor C.D. Nelson, first Head of Biological Sciences, who gave so fully of himself to the whole University community, a prize of approximately $500 for the purchase of a work of art is made annually to a student, a faculty member or a staff member making an outstanding contribution other than academic, to Simon Fraser University. Nominations are to be made through Financial Assistance.
This prize given as a Simon Fraser University award, will be in the form of a work of art purchased through a recognized art dealer. A small metal plaque bearing the title C.D. Nelson Memorial Prize may be affixed to the work of art.

Project Awards
University Awards also may be granted to students for outstanding projects designed and intended to enrich the aesthetic, social or cultural environment of Simon Fraser University. Students wishing to apply for a project award must submit to the Director of Financial Assistance a detailed statement describing the project and its estimated costs. For projects in progress, a statement must be included, indicating the extent of completion and financial commitments. Grants will be deposited in special accounts, and withdrawal of payments shall be authorized by the Director of Financial Assistance or designate. Normally, funds granted in this category may not be used for remuneration of individual student participants of a particular project.

Simon Fraser University Piping Award
Individual piping awards valued at $600 are available to students who are members of the Simon Fraser University Pipe Band in recognition of their significant contribution to the University. The Ceremonies Office will forward nominations to Financial Assistance.

University awards for Arts students

Bice Caple Awards
Up to 3 awards in the Fine Arts will be made each year. Each recipient will be nominated by the Director of the School for the Contemporary Arts and will receive $1,000, the award to be disbursed in two equal installments, one in the Fall semester and one in the Spring semester. The awards will be made for outstanding contribution to the Fine Arts at Simon Fraser University during the previous year.

During the tenure of the award each recipient must:

- be a registered 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.

Simon Fraser University Service Awards (Contemporary Arts)
A number of awards are offered annually in the Fall and Spring semesters to students in the School for Contemporary Arts who have made a significant contribution in their field of study. Candidates must have been registered in a minimum of 6 credit hours (hours with a calculated GPA) with satisfactory academic standing in the qualifying semester of contribution. Graduate students may also be recognized for these awards.

University awards for Education students

Professional Development Program Awards of Excellence
Up to five awards valued at $500 each are awarded annually in recognition of excellence in overall performance during the 401/402 and 405 practica as well as demonstrated potential for future professional growth. Nominations may come from faculty, faculty associates, coordinators, school associates or other student teachers. Contact the Faculty of Education for further information.

University awards for student athletes

Athletic Entrance Awards
Two Athletic Entrance Awards of $2,000 each (disbursed in two $1,000 instalment) are available to students on the basis of their demonstrated leadership along with good academic standing in the school program. Students must be recommended by the Director of Athletics, maintain a CGPA of 2.00 and register in 12 hours during the tenure of the award.
Athletic and Recreation Awards
Athletic and Recreation Awards of up to $1,400 are granted in recognition of significant contributions to the athletic activities of Simon Fraser University, or in recognition of excellence in extraordinary amateur athletic activities.

The following regulations apply to Athletic and Recreation Awards.

- With the exception of new students, candidates must be currently enrolled as students in any faculty at Simon Fraser University. Students must have achieved a minimum grade point average of 2.0 in the previous semester and must not be on Academic Probation, or, in the case of a first semester or transfer student, must possess an equivalent high school or college standing.
- Ordinarily, recipients of Athletic Awards must be registered in 12 or more hours. Students who register in less than 12 hours or subsequently drop below 12 hours may have their awards cancelled.
- Suitable qualifying candidates will be nominated by the Department of Athletics or Recreation. Nominations also may be made by a member (or members) of the Simon Fraser University faculty, staff or student body.
- Applications should be submitted by mid-semester, prior to the semester of utilization, to the Director of Athletics.

Simon Fraser University Recreation Awards
Nominees or applicants for Recreation Awards must have good academic records and demonstrate excellence, outstanding participation or high potential in recreational activities. Recreation Awards are available in activities including Varsity sports. In addition to these a limited number of awards will be available to academically eligible candidates who demonstrate excellence in an extraordinary amateur activity (e.g. figure skating), which ordinarily might not be considered in the recreational sports area.

Awards are granted for a period of one semester, and vary in amounts but do not exceed a full semester's fees. Students may re-apply or be re-nominated for awards in subsequent semesters.

Students may be considered for Recreation Awards in their first semester at Simon Fraser University. Enquiries regarding Recreation Awards should be directed to the Director of Athletics and Recreation.

Recreation Leadership Awards
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 eight awards of $1,200 each (disbursed over two semesters) are available to entering students on the basis of recommendations from secondary school and on the basis of their demonstrating leadership in the school program.

Eight awards of $1,200 each (disbursed over two semesters) are available to students who have completed at least two semesters at Simon Fraser and have demonstrated consistent leadership skills and potential for further development.

Students must be recommended by the Director of Athletics, maintain a cumulative 2.00 grade point average and register in 12 credit hours.

Rick Hansen Athletic Award
An award valued at $1,400 (disbursed in two payments of $700) is available to a physically challenged student athlete who meets the general award requirements.

University administered Private/Endowment Awards
The following awards have been made possible by generous donations. Unless otherwise noted, the same regulations apply as for University administered Awards.

Private awards for all students
Annual Corporate Appeal Fund
Awards will be granted from time to time from this fund in the name of corporate donors to the University. These awards may be based on academic merit or financial need in keeping with the wishes of the donor.
Alexander Fraser Award in Piping and Drumming
These awards, equal in value to the accrued interest, are made in the Spring semester 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 also may be made to the student who has contributed most significantly to the development of Highland tradition at Simon Fraser University.

Gandhi Essay Award
A $350 award is available under the auspices of the Gandhi Peace Trust Fund of the India Club. All Simon Fraser University undergraduates, who have completed at least 30 credit hours and who are registered for courses in the current academic year (September - August) are eligible for the award. Essays should be typed and be no longer than 2500 words. Essays must be submitted to the Director, Institute of Humanities by May 31st.

Iain Ormsaig MacKinnon Memorial Fund
An annual award, from a portion of the earned interest, is available any semester to an undergraduate student in any Faculty. The award is for a student who plays the bagpipes, either as a solo musician or as part of the Simon Fraser University Pipe Band or another pipe band, and who has maintained a 3.25 CGPA. Applications/nominations for this award should include a letter of reference from an appropriate individual discussing the applicant's contribution as a piper.

Eileen Purkiss Memorial Endowment Award
One or more awards, equal in value to the interest accrued from the endowment fund established in memory of Eileen Purkiss, will be available each Spring semester 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. Applications or nominations may be made through Financial Assistance with appropriate letters of reference.

SFU Pipe Band Memorial Award
This fund provides annual award(s) from the earned interest of the endowment. An award will be granted 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 SFU Pipe Band Major.

Ted Sinnott Memorial Fund
Up to $500 will be awarded annually in the Summer semester 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 will be received by Financial Assistance.

Dr. Abe Unrau Memorial Co-op Prize
The purpose of the endowment fund is to promote the concept of co-operative education and to support the annual Dr. Abe Unrau Memorial Co-op Prize. One or more annual prizes, equal to the amount of available earned interest, will be awarded to an outstanding co-op student in any faculty who, at the time of graduation, has the highest cumulative grade point average and who has successfully completed a minimum of four work semesters.

The award will be made by the Senate Undergraduate Awards Adjudication Committee on the recommendation of the Co-operative Education Program.

Joan H. Walter Memorial Fund
This fund has been established in memory of Joan H. Walter, formerly a Simon Fraser University Media and Public Relations employee and University tour guide supervisor. An award equal to the accrued interest will be made annually in the Fall semester, upon nomination from the Simon Fraser University Media and Public Relations Office. The award will be made to a student who has been employed in the Tour Guide Service. Special consideration will be given to the nominee'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.
Roger G. Welch Alumni Prize
An annual prize, valued at a portion of the accrued interest, is available to an alumnus/alumna 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 on 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.

Private awards for Applied Sciences students

Communication Alumni Endowment Award
This award, valued at approximately $1,000, is available to a third or fourth year undergraduate student in Communication who submits the best essay.

Computing Science Undergraduate Student Society Award
The Undergraduate Computing Science Student Society fund provides annual awards from a portion of the earned interest. Awards will be given in the Fall and/or Spring semesters 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, meet the School's requirement 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.

Harold Hancheroff Memorial Scholarship in Sports Education
An annual scholarship is available from a portion of the earned interest, 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.

Private awards for Arts students

Archaeometry Prize Endowment Fund
A prize valued at approximately $600 (depending on interest accrued) will be awarded in the Summer semester. 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. This prize will be awarded on the recommendation of the faculty members involved in Archaeometry.

Jane Austen Society Prize
An endowment fund has been established to support an annual prize of $100 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 of the English Department. Applications and/or nominations are to be forwarded to the Dean of Graduate Studies office for adjudication.

Robert C. Brown Award
The Robert C. Brown Endowment Fund was established to recognize the outstanding contributions of Dr. Robert C. Brown to Simon Fraser University, and particularly to the Faculty of Arts where, for fifteen years he was Dean.

The award provides a certificate and an annual award of approximately $2,000 from a portion of the income earned on the endowment. The award will be granted to a student in the Faculty of Arts who has completed a minimum of 60 credit hours at the University. The recipient will have demonstrated a combination of outstanding academic achievement and outstanding performance or leadership in another endeavour at Simon Fraser. This may be in athletics, in service to the University, or in representing the University to the community at large. Nominations, including the nominee's résumé, should be forwarded to Financial Assistance.
British Columbia Psychological Association Award
A certificate of excellence will be awarded in May for outstanding achievement in the study of Psychology to a graduating student who has completed the requirements for a Bachelors degree over the previous Summer, Fall, or Spring semester.

Al Eisenring Gerontology Award
An annual award is available from a portion of the accrued interest to an undergraduate mature student whose area of study is Gerontology. A departmental recommendation is required from the Chair of Gerontology.

European History Book Prize
This book prize, valued at a portion of the accrued interest, will be awarded to 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 History department by April 15th and must have been written in one of the three previous semesters. The department of History awards committee will make a recommendation to the Senate Undergraduate Awards Adjudication Committee. The History department will undertake to publicize and adjudicate the essay competition.

Institute for the Humanities Travel-Study Award
$1,500 is available in the Spring or Summer semester to assist a student to attend the travel-study credit program offered through the Alumni Relations Office. A minimum cumulative GPA of 2.50 is required and the award is available to third or fourth year students who are taking a major or minor in English, Philosophy or History. Applications should be sent to the Director, Institute for the Humanities, and must include a curriculum vitae, a 750 word essay describing the relevance of the program/course to the student's academic program, and two letters of reference from Simon Fraser University faculty. The application deadline is January 6th.

Betty Lambert Memorial Prize
A prize equal in value to the interest accrued from the endowment fund established in memory of Betty Lambert, will be made available annually in the Spring semester. The prize will be based upon the best unpublished play submitted by any undergraduate student enrolled in at least nine credit hours. Students must apply to the Department of English by February 15th.

Cliff Lloyd Memorial Fund
A prize equal in value to the accrued interest will be awarded annually in May to an honors student in Economics graduating with the highest CGPA.

Stephen McIntyre Book Prize in History Endowment
The Stephen McIntyre memorial book prize will be awarded to the top graduating student in history in recognition of academic excellence.

Richard Morgan Memorial Book Prize
This award is for 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 semesters.

Ingrid Nystrom Archaeology Award
The Ingrid Nystrom Endowment Fund provides an annual award from a portion of the accrued interest. The award will be given in the Spring semester to an undergraduate student majoring in Archaeology or Physical Anthropology. Please consult the Archaeology Department for further details and application procedures by November 1st.

Dr. M. Sheila O'Connell Prize for Children's Literature
One prize of $1,000 each will be awarded annually in the Spring semester to an undergraduate student who has completed work in the following two categories within the general subject of children's literature.

- Fiction: the writing of a children's story
- Criticism: a critical analysis of a piece of children's literature

Applications and/or nominations are to be forwarded to the Dean of Graduate Studies Office for adjudication.
Margaret Ormsby History Prize Endowment Fund
Margaret Ormsby, the doyen of historians of British Columbia, wrote the standard work on the history of the province, served for ten years (1965 - 75) as the head of the history department at the University of British Columbia and as president of the Canadian Historical Association in 1965 - 66, and was awarded an honorary doctorate by Simon Fraser University in 1971.

The Margaret Ormsby History Prize will be awarded for the best essay written by an undergraduate upper-level student enrolled in a Canadian History course at Simon Fraser. Special consideration will be given for originality in analysis and treatment of the subject. Essays are to be submitted to the History Department by April 15th, and must have been written in one of the three previous semesters.

The prize will be administered by the History Department and awarded on the recommendation of the Ormsby Prize Committee to the Department. The History department will undertake to publicize and adjudicate the competition.

Philippa Polsen Memorial Prize
This award of $250 is offered annually to a student for the best English honors essay completed during the calendar year preceding October 15th. The Selection Committee, composed of the Department of English Undergraduate Committee, will consider all essays completed during the year. Graduated students, as well as those still completing a degree, are eligible.

Prize of the Ambassador of Switzerland in Canada
Two book prizes have been donated to Simon Fraser University to be awarded to students in their final year with the highest grades in German and French languages on recommendation by the Department (for German) and the Department of French (for French).

Psychology Alumni Honors Prize
This prize in the amount of $500 will be made annually in the Fall or Spring semester to a student enrolled in Psychology 490/499. The award will be based on the quality of research conducted for the Honours project. The recipient will be expected to give a talk on his/her research at the Psychology Department's annual convention. Both graduates and undergraduates are eligible.

Simon Fraser University Gold Medal and Prize In History
The Department of History wishes to recognize and encourage academic excellence by giving an award to the best history student in each graduating year. The award will be based on the best grade point average for upper level work.

Robert L. Stanfield Book Prize in Political Science
One or two prizes equal in value to the accrued interest, are awarded in the Summer semester to outstanding graduating students in Political Science. Applicants must be recommended by the Department of Political Science.

F.W. Sullivan Visual Arts Award
An annual prize equal to the interest accrued in this endowment fund will be available in the Spring semester 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.

Winnie Topping Memorial Prize
An award from the accrued interest will be made annually in May 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 recommendation from a faculty member of the Department of Sociology and Anthropology.

Volunteers of the Burnaby Art Gallery Award in Visual Arts
An annual award, based upon earned interest from the endowment, is available to the most promising upper division student in third year in the Visual Arts Program (FPA 361). The award will be made by the Contemporary Arts Awards Committee.
Private awards for Business Administration students

Bob Ackles Sports Administration Scholarship
A scholarship will be awarded annually (on the basis of academic performance) to a student enrolled in Business Administration. Preference will be given to students who demonstrate a keen interest in sports administration. Recommendations will be received from the Director of Athletics and Recreation.

Samuel Belzberg Award of Excellence in Finance
The Diamond Fund in Business will support an annual Samuel Belzberg Award of Excellence in Finance at Simon Fraser University. The annual award valued initially at $200 will be given 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, Departmental nomination is required.

Business Administration Students Endowment Fund Prizes (Vancouver Executives Association)
Two prizes, one valued at $150 and the other at $100 will be available annually in the Summer semester to the two finalists in the Dean's Medal competition. Students will be chosen by the Dean of Business Administration.

Cohen Fund in Business - J. Segal Prize
The Cohen Fund in Business will support the Joseph Segal Prize in Marketing. The prize will be awarded in May to the top undergraduate graduating Business Administration student in Marketing. This prize is by departmental nomination.

Private awards for Education students

Jean G.K. Bailey Memorial Fund
Two awards will be made each year in the Summer semester, one each to: a student who entered the Professional Development Program in September, and a student who entered in January.

Dr. Maxwell A. Cameron Memorial Medals and Prize
A silver medal and a $100 prize are awarded annually by the BCTF to the student in each of: the University of British Columbia, the University of Victoria and Simon Fraser University, completing the final year of the program leading to the Professional Basic Certificate for secondary school teaching who achieves the highest standing in academic and professional studies and first class standing in EDUC 405.

A similar award is made on the same terms to the leading student in the final year of the program leading to the Professional Certificate for elementary school teaching. Students will be selected by the Faculty of Education.

These awards 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.

Claude E. Lewis Award in Education
Two medals or awards will be awarded to the students who attain the highest standing on completion of the Professional Development Program in the Faculty of Education.

Private awards for Science students

Archaeometry Prize Endowment Fund
A prize valued at approximately $600 (depending on interest accrued) will be awarded in the Summer semester to either 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 on the recommendation of the faculty members involved in Archaeometry.

Chemistry/Biochemistry Award
An annual award, equivalent to one semester's basic tuition fees at Simon Fraser University, will be awarded in the Fall semester to an undergraduate student in the final year pursuing a major or honors degree in Chemistry or Biochemistry. The award will be granted to an outstanding student as judged by academic accomplishments and contributions to the department and to the University. Departmental recommendation/nomination is required.
Chemistry Book Award - Dr. E.J. Wells
Three book prizes will be awarded annually to graduating students in Chemistry, Chemical Physics or Biochemistry for outstanding graduation grade point averages.

Dean of Science Award
A prize equal in value to the accrued interest is awarded each Fall semester, on the basis of academic merit to a student in the Faculty of Science, who has completed a minimum of 90 semester hours in a major or honors degree program. The prize will be based upon the student's GPA in the previous two semesters of full-time study at Simon Fraser University (at least 12 semester hours credit in each semester) and the nominee will be recommended by the Faculty of Science Undergraduate Curriculum Committee.

Rudi Haering Award in Physics
An award has been established by members of the Simon Fraser University Physics Department in honor and recognition of Dr. R.R. Haering, founding Department Head and Professor, 1964-72. One or more awards, equal in value to the accrued interest, will be made annually, on the recommendation of the Physics Department, to an outstanding Physics or Chemical Physics undergraduate who has completed six semesters of study. A book prize may be included as part of the award.

Management and Systems Science Prize
The Management and Systems Science Graduation Prize is an annual award, from a portion of the earned interest provided from the Management and Systems Science Endowment fund. To be eligible, a student must be completing their degree in the preceding Fall or Spring semester of the award or the Summer semester 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 criteria will be academic achievement and contribution to the MSSC Program. A portion of the earned interest may be used to support undergraduate scholarships for students in the Program.

Mathematics and Statistics Endowment Fund
This fund has been established to provide awards to further Mathematics undergraduate education at Simon Fraser University and to encourage secondary school students to enter into the study of Mathematics. Several awards will be made annually to the most outstanding students in selected first and second year Mathematics and Statistics courses. From time to time, interest income may be used for the enrichment of the Mathematics program at the discretion of the Chair providing the expenditure is within the general intent of the endowment fund. The Chair of Mathematics and Statistics will forward nominations for awards and prizes to the Senate Undergraduate Awards Adjudication Committee.

Putnam Awards
The following awards will be given each year by the Department of Mathematics and Statistics 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.

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Webber Chemistry Co-op Book Prize
Up to three book prizes, valued at approximately $50 each, will be awarded annually to Co-operative Education Chemistry (Biochemistry) students who submit outstanding Co-op work reports during the year. The awards will normally be made in the Spring semester on the basis of recommendations submitted to the Senate Committee on Scholarships, Awards and Bursaries by the Chemistry Co-op Co-ordinator.
Private awards for student athletes
Unless otherwise noted, the following awards require nomination by the Director of Recreation and Athletics.

Yolanda D. Anderson Women's Basketball Award
An annual award, valued at a portion of the accrued interest, is available to a full-time student in good standing who is on the Simon Fraser women's basketball team and who demonstrates athletic ability in basketball.

C.G. "Chuck" Arnold Golf Award
The interest from this endowment will be awarded to a student who demonstrates outstanding ability in golf and meets the academic requirements. Preference will be given to residents of the Lower Mainland of BC.

Athletic Awards for continuing students
The following donors have established endowments to provide awards in perpetuity from the earned income. These awards are for athletes who meet the academic requirements and demonstrate outstanding athletic ability.
BC Television Broadcasting System Ltd.
BC Central Credit Union
Best Cleaners and Contractors
Canadian Airlines International Ltd
Robert F. Harrison and Partners
Keg Restaurants Limited
Mcdonalds Restaurants of Western Canada
Reed Shaw Stenhouse Limited
Royal Canadian Legion Branch #2
Scott Paper Limited
Dr. Gordon M. Shrum
Team Skyline Limited
Victor V. Spencer
West Coast Reduction

Bank of Nova Scotia
A $3,000 self-perpetuating athletic award has been established by the Bank of Nova Scotia. This provides an annual award of approximately $300 to a student registered in a program of study in any faculty at Simon Fraser demonstrating outstanding ability in football, as well as proven academic achievement. Interest from this endowment will go to an athlete who meets the academic requirements and demonstrates outstanding athletic ability.

Beedie Construction Company Ltd
An annual scholarship, valued at a portion of the earned interest is available in the Fall semester to a woman student who is a member of the Simon Fraser Women's Softball team. This scholarship is also based on academic merit.

BC Jockey Club Award
From the proceeds of a fund donated by the BC Jockey Club, two annual grant-in-aid awards of $600 each will be awarded to students (male or female) who demonstrate exceptional accomplishment or promise and are active in intercollegiate sport. However, recipients must be additionally qualified in terms of good academic standing and character.

BC Lions Alumni Association Foundation
An annual scholarship of $500 is available for a former BC secondary school football player who is an undergraduate student at Simon Fraser University in good academic standing.

BC Lions Athletic Award
Interest from this endowment has been made available by the BC Lions Football Club in memory of the late Mr. Grant McConachie, one of the original members of the Board of Governors of the club. Scholarships will be awarded to students, subject to the discretion of the Director of Athletics. The awards, for which male students in any faculty are eligible, will be made on the basis of academic achievement in addition to outstanding ability in football. The awards will be made for the Fall semester only.
BC Wrestling Association Alumni Award
An award equal in value to the accrued interest is available to a student who exhibits good ability in wrestling and meets the academic requirements.

Canadian National Railways
A $500 self-perpetuating athletic award has been established by Canadian National Railways. This will provide an annual award to a student who is registered in a program of football, as well as proven academic achievement.

Centaur Alumni Award in Wrestling
An award of approximately $1,000 is available to a student active in wrestling at Simon Fraser who meets the athletic and academic requirements. Preference will be given to a Centennial Senior Secondary School graduate.

Clansmen Athletic Alumni Memorial
Awards will be provided annually to full time undergraduate entering students who are involved in the intercollegiate football program.

Moira Colbourne Alumni Scholarship
Two scholarships, valued at up to $800 each, are available in the Fall and Spring semesters to any active member of the University Women's Field Hockey team, providing they meet the academic requirements.

Bill De Vries Athletic Award
An annual award, from a portion of the accrued interest, is available in any semester to a student who exhibits outstanding academic achievement and athletic performance. The recipient should also possess the personal qualities of integrity and generosity.

Les and Greg Edgelow Wrestling Award
An annual award, valued at a portion of the accrued interest, is available 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 registered full-time. The award is also based on athletic merit in wrestling.

Evergreen Sport Fund Golf Award
An annual award valued at $1,600, payable in two instalments of $800, is available to an entering undergraduate student in any faculty who demonstrates outstanding ability in the sport of golf.

Dr. Peter Harmon Wrestling Scholarship
One or more scholarships equal in value to the accrued interest are available annually to undergraduate full or part time students who are involved in the wrestling program and have maintained a good academic record.

Wayne Holm Football Scholarship Endowment Fund
This fund provides an annual scholarship for a student exhibiting exceptional ability in football and meeting the academic requirements.

Indo-Canadian Wrestling Award
An annual award, valued at a portion of the accrued interest, is available to a full or part-time student in good standing. The award is based on athletic merit in wrestling.

Mike Jones Wrestling Endowment Fund
An annual award of approximately $1,000 is available any semester based on athletic merit in the wrestling program to a part time or full-time student in good academic standing.

Rick Jones Memorial Award
One or more awards, valued at a portion of the accrued interest, 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.
Nick Kiniski Wrestling Award
An annual award, valued at a portion of the accrued interest, is available to a full or part-time student in good standing on the University wrestling team.

Jon-Lee Kootnekoff Basketball Award
An annual entrance award is available to a first year student on the Simon Fraser University men's basketball team. The award will be disbursed over two semesters, valued at approximately $450 per semester.

Labatt Breweries of BC Soccer Awards
Three awards of $250 each are available to students who exhibit exceptional ability in soccer and meet the academic requirements.

Labatt Breweries of BC Limited Football Awards
A number of awards are available annually to students who are registered 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.

The Leon J. Ladner Athletic Award
From the proceeds of a fund donated by Mr. Leon J. Ladner, QC, LLD, an annual scholarship of $250 will be awarded usually for a period of two semesters, to a student of Simon Fraser University, regardless of faculty or semester, demonstrating exceptional accomplishment or promise in active competitive sport. However, recipients will be additionally qualified in terms of good academic standing and character, all as may be determined by the appropriate officials of the University.

William McMahan Trophy in Football
Mr. William McMahan has donated a trophy for an outstanding football player who has a good record of scholastic achievement. This trophy will be presented at the Annual Athletics Awards Banquet during the Spring Semester.

Paul Nemeth Wrestling Scholarship
An annual scholarship, valued at a portion of the interest earned, shall be awarded in the Fall semester to a student who is maintaining good academic performance and who is a member of the Simon Fraser University wrestling team.

Pacific Custom Brokers Ltd.
An annual award valued at $1,500 is available in the Fall semester to a student softball player from out-of-province who is entering first year at Simon Fraser University.

Lui Passaglia Football Award
An annual award is available, valued at a portion of the earned interest from the endowment. The award is based on athletic merit in football and will be awarded to a full or part time student in good standing who is on the football team at Simon Fraser University.

Murray Pezim Football Scholarship
A scholarship, equal in value to the accrued interest, is available annually to a student involved in the football program. The award is also based on academic merit.

Rae/Suart Alumni Basketball Awards
Two awards of $1,000 will be awarded each Fall to BC students entering first year at Simon Fraser on an athletic scholarship. The awards will be made on the basis of outstanding achievement in scholastics and basketball.

Richmond Centaurs Softball Award
A $1,500 scholarship will be awarded annually to a student in good academic standing, who is active in Women's softball at Simon Fraser University. Preference will be given to a student from the City of Richmond, BC.

Royal City Travel Limited Athletic Endowment
Royal City Travel has established an athletic endowment in recognition of the outstanding achievement of Terry Fox. Awards will be made to athletically gifted students involved in the University's intercollegiate athletic program.
Simon Fraser University Alumni Soccer Award
An annual award, from a portion of the earned interest, is available in the Fall or Spring semester to an undergraduate student involved in the University soccer program.

Simon Fraser University Alumni Student-Athlete Basketball Leadership Award
Entering or undergraduate students are eligible for this award providing they can demonstrate outstanding athletic ability in the sport of basketball, are in good academic standing and are recommended by the head basketball coach.

Simon Fraser University Soccer Scholarship
This $500 award is given to a student who exhibits exceptional ability in soccer and meets the academic requirements of the University.

Simon Fraser University Swimming Alumni Endowment Fund
Annual awards up to $1,200 will be awarded to students who exhibit exceptional ability in swimming and meet the academic requirements.

Simon Fraser University Track and Field Alumni Scholarship
An annual award, equal in value to the accrued interest, is available annually to a student who is a member of the Simon Fraser University track and field team and who meets the academic requirements.

Simon Fraser University Women's Soccer Endowment Fund
Awards are available annually, from a portion of the interest earned from the endowment. The award is based on outstanding athletic merit by a student playing women's soccer at the University. The award will be granted to a full-time student in satisfactory academic standing.

Scott Paper Alumni Award
This award for athletic and academic excellence will be awarded to the most exceptional athlete/scholar competing for Simon Fraser University each year. The student will be required to hold a minimum 3.00 GPA to qualify for the award. A recognition of achievement plaque will be presented each year.

Sandra Spence Memorial Wrestling Award
One or more awards, from the accrued interest, are available annually in the Fall or Spring semesters to students who are members of the Simon Fraser wrestling team and who meet the academic requirements.

Bob Spray Rugby Endowment Fund
This award will be available annually in the Spring semester to a rugby player 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 semester and be registered in a minimum of 12 credit hours during tenure of the award. Applications should be submitted to the Simon Fraser University rugby coach in the previous Fall semester.

Stranco Systems Limited Swimming Scholarship
An annual scholarship is available in the Fall semester to a student who is a member of the varsity Simon Fraser University Swim team. The award is based upon academic merit and exceptional ability in swimming.

Annis Stukus Football Scholarship
A scholarship, equal in value to the accrued interest, is available annually to a student who is a member of the Simon Fraser University football team and who meets the academic requirements.

Florence and Lynn Sully Basketball Scholarship
Two annual awards are available to athletes who exhibit exceptional ability in basketball and meet the University academic requirements.
Lynn K. Sully Athletic Award
The interest from this endowment is to provide two awards, one for football and one for basketball, to athletes who demonstrate outstanding athletic ability and meet the academic requirements.

Barbara J. Towriss Women's Basketball Award
A scholarship, equal in value to the accrued interest, is available annually to a woman student who is a member of the Simon Fraser University women's basketball team and who has a good academic performance.

Jay Triano Basketball Award
An annual award, valued at a portion of the earned interest on the endowment, is available 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.

University Publishers
The interest from this endowment will be given to an athlete involved in the golf program who meets the academic requirements.

Vancouver Ski Club
An award approximately equal to accrued interest of the endowment fund will be made available in the Spring semester of each year. Students should apply through Financial Assistance and should seek a nomination through the Director of Athletics.

White Rock Renegades Women's Softball Awards
An annual award, equal in value to the accrued interest, is available to a member of the Simon Fraser University Women's intercollegiate softball team. The recipient must have been a member of the Renegade softball organization (South Surrey White Rock) for at least two complete seasons.

University administered Loans

Student Emergency Loan Fund
Short term emergency loan funds are available to students who urgently need money while awaiting other sources of funding. Students may borrow up to $500, interest free, for a period of up to 60 days, provided that an acceptable source of repayment can be identified.

Each student applicant completes a short form. A Financial Assistance advisor interviews the applicant to review their personal circumstances and to determine emergency loan eligibility. Further information is available in Financial Assistance.

Externally administered Entrance Scholarships
External entrance scholarships for all students
External entrance scholarships for Applied Sciences students
External entrance scholarships for Education students

The following Entrance Scholarships are not administered by Simon Fraser University. It is the responsibility of the student to make application and enquiry through the appropriate agency as indicated in the Calendar entry.
External entrance scholarships for all students

Awards Administered by the University of British Columbia Tenable at Other Institutions
The University administers a number of awards which are tenable at other institutions in British Columbia. Students should consult the award descriptions for details of the awards, including the eligible institutions in each case. Please note that the application must be made to the University of British Columbia, Student Awards Office or local post secondary institution.

00581 B'nai B'rith Women Centennial Chapter 1022 Scholarships
07520 British Columbia Forest Products Limited Bursaries
04704 British Columbia Forest Products Limited Entrance Scholarships
04737 CIP Forest Products Incorporated, Talsis Pacific Region Scholarship
04707 Dairy Industry Credit Union Scholarship
04786 William L. Hurford Memorial Scholarship
04718 International Longshoremen's and Warehousemen's Union Entrance Scholarships
00530 International Longshoremen's and Warehousemen's Union Undergraduate Scholarships
00577 Earl Kinney Memorial Scholarship
00558 Thomas P. Mayes Scholarship
04731 Piping Industry Journeyman Training and Industry Promotion Fund
04732 Real Estate Board of Greater Vancouver Entrance Scholarships
00547 Retail Clerks Union, Local 1518, Scholarships
07740 Retail Wholesale Union Local 470 Bursary
04479 Retail Wholesale Union Local 517 Bursary
07672 Retail Wholesale Union Local 580 Bursaries
04795 Telecommunications Workers Union Scholarships
04793 Telecommunications Workers Union, Thomas Ward Stanley Memorial Scholarship
04798 United Association of Plumbers & Steamfitters, Local 170 Scholarships
04750 Vancouver Sun Scholarship for Sun Carriers
04751 Vancouver Sun Special Scholarship for Sun Carriers
04780 Vancouver Sun Regional College Entrance Scholarship for Sun Carriers
04791 Van-Tel Credit Union-Les King Memorial Bursary
04792 Van-Tel Credit Union-Leo Morris Memorial Bursary
00303 Anne Wesbrook Scholarship
07724 White Spot Limited Bursaries

Association of Universities and Colleges of Canada Awards
The Association of Universities and Colleges of Canada (AUCC) administers a number of entrance awards. Students may apply for many of the awards by virtue of their parents' employment with the relevant donor companies. All awards are tenable for any recognized full-time degree course at any AUCC university or college. Candidates must be prepared to enter university in the year of competition. The closing date for receipt of completed applications is June 1st. Candidates must have an average of at least 70% in each of the last two years of secondary school and must send these results to the AUCC as soon as they are available.

Candidates for the AUCC awards should write directly to the Supervisor, Candidate Assessment International Relations and Scholarship Administration, AUCC, 151 Slater Street, Ottawa, Ontario, K1P 5N1.

British Columbia Forest Products Limited Scholarships
Six one-year scholarships of $1,200 each are available each year to the qualified legal dependants of employees.

These scholarships are open to students proceeding in the Fall from Grade 12 to a full course of studies at the University of British Columbia, Simon Fraser University or University of Victoria for the first time and for dependants of Alberta employees at these universities or an approved university in Alberta.

Scholarships will be awarded to the six candidates with the highest records of scholastic achievement in their final two years of high school. No award will be made, however, to an applicant with an overall average less than 70%.

Applicants for these scholarships must complete the application for Scholarships and Bursaries form, which may be obtained from the University Awards Office, University of British Columbia or any other post secondary institution. This application must
be received by the institution not later than May 15 and must contain the necessary details of family service with the company. A transcript of high school marks must be submitted with the application.

Dairy Industry Credit Union Scholarship
A scholarship of $500 is offered annually by the Dairy Industry Credit Union to a student who is proceeding to the University of British Columbia or Simon Fraser University from Grade 12 in a full program of studies leading to a degree in any field. An applicant must be the son, daughter, grandson or granddaughter of an active member of the Dairy Industry Credit Union. The Dairy Industry Credit Union Scholarship will be awarded to the candidate who, in the opinion of the University, in consultation with the Credit Union, is best qualified in terms of academic merit and financial need. An additional award of $500 is available for attendance at the British Columbia Institute of Technology or a BC Regional College. Deadline: May 15. Apply to Awards Office, University of British Columbia, or any other college or post secondary institution.

Dr. L. M. Greene Scholarship
A scholarship in the amount of $500 and is awarded annually to a former Prince Rupert Senior Secondary School student who is interested in pursuing a vocation in any of the health care fields.

Applications will normally be considered in May or June. Apply to Prince Rupert Regional Hospital, 1305 Summit Avenue, Prince Rupert, BC V8J 2A6.

William L. Hurford Memorial Scholarship
A scholarship of $1,000, offered in memory of William L. Hurford by the BC Maritime Employers Association, is open to sons and daughters of members, in good standing, of the International Longshoremen's and Warehousemen's Union. The scholarship will normally be awarded to a candidate who is proceeding in the Fall to a full first year program of studies at the University of British Columbia, the University of Victoria, Simon Fraser University, the BC Institute of Technology, or a regional college in British Columbia. Apply at University of British Columbia, Student Awards Office, before May 15th, or any other college or post secondary institution.

Imperial Oil Higher Education Awards
The Higher Education Awards program provides full tuition and compulsory fees for sons and daughters of Imperial Oil Ltd. employees, annuitants, or deceased employees. The applicant must begin their education within six years of starting Secondary School (grade 9) and must have an average of 70% or more in the subjects required for admission by the institution. Once an award is granted, the student must pass all subjects and complete a full workload each year. For further information, please contact: Administrative Management Services, Awards Division, PO Box 414, Pickering, Ontario L1V 2R6. Phone (416) 420-0642.

International Longshoremen's and Warehousemen's Union Entrance Scholarships
Four scholarships of $500 each are offered to members, and sons and daughters of members, in good standing, of the International Longshoremen's and Warehousemen's Union. They will normally be awarded to the candidates who are proceeding in the Fall to a full first year program of studies at the University of British Columbia, University of Victoria, Simon Fraser University, the BC Institute of Technology, or a regional college in BC. The donors reserve the right to withhold awards if the academic standing of candidates is not sufficiently high, or to re-award the scholarships if winners receive other scholarships of substantial value. Apply at University of British Columbia, Student Awards Office, before May 15th.

Navy League of Canada University Entrance Scholarship Program
The Navy League of Canada annually awards scholarships to Royal Canadian Sea Cadets, former Cadets, Navy League Wrenettes or former Wrenettes, entering a university or college course of study leading to a degree. Each scholarship is valued at $400.

These scholarships may not be granted where candidates enroll in the Canadian Forces on a basis whereby the Government provides free tuition or grants.

The value of the scholarship is made payable to the university or college and is sent to successful candidates between September 1st and 15th.
Requirements

- Personal letter of application from candidate including information on the name and location of the university or college to be attended and the course of study to be taken.
- Original certificate, or certified copy thereof, as issued by the responsible educational authorities which records examination results, by subjects, upon which admission to university or college is based. (Certificate will be returned.)
- Letter from Commanding Officer of Corps attended by candidate including proof that candidate was a Royal Canadian Sea Cadet, or Navy League Wrenette, in good standing for at least 12 months, name and location of Corps, and recommendations.
- Recommendation of Branch President responsible for Corps.
- Recommendation of Division President responsible for Corps.

Applications

To be submitted through the Navy League Branch responsible for the Corps of which the candidate was a member, to the responsible Division, to the National Office, Navy League of Canada.

Applications and all supporting documents must be received at the National Office on or before August 15th. Adjudication will be completed and all candidates advised during the first week in September.

Noranda Mines Limited Entrance Scholarship

Noranda Mines Limited offers a number of scholarships valued at $1,500 per academic year to students entering University or a college for the purpose of completion of a first diploma or a first degree. An applicant, at the time of an initial application for a scholarship, must be the son or daughter of a full time regular employee of a Noranda Group company in the region in which the application is submitted. The scholarship is available to a student entering or in a course of study in the natural or applied sciences, mathematics, economics, or business administration. Application forms may be obtained from the local Personnel Administrator and must be received no later than May 30th by: Mrs. H. Raftery, Regional Co-ordinator, Noranda Group Scholarship Program, Noranda Mines Ltd., 1066 West Hastings St., Ste. 1500, Vancouver, BC V6E 3X1. A covering handwritten letter must accompany the application form, summarizing career aspirations (aims and objectives), and outlining reasons why the field of study and particular institution were chosen.

Piping Industry Journeyman Training and Industry Promotion Fund

Two scholarships of $500 each, provided by the trustee board of the Journeyman Training and General Industry Promotion Fund, are offered annually to students entering the first year at the University of British Columbia or Simon Fraser University, and proceeding to a full program of studies leading to a degree in any field. To be eligible, a candidate must be (a) the son, daughter or legal dependent of a member of the United Association of Plumbers and Steam-fitters, Local 170, who is employed by a firm which is a contributor to the Fund and which employs members of the United Association of Plumbers and Steamfitters, Local 170, or (b) the son, daughter or legal dependent of an employer who is a contributor to the Fund. Apply at Student Awards Office, University of British Columbia, local college or post secondary institution, before May 15th.

Real Estate Board of Greater Vancouver Entrance Scholarships

Five scholarships of $750 each are offered in competition by the Real Estate Board of Greater Vancouver to Grade 12 students enrolling for full-time studies in the Fall in a course of at least two years duration leading to a recognized degree, diploma, or certificate at the University of British Columbia, Simon Fraser University, Vancouver Community College, Douglas College, Capilano College, or the BC Institute of Technology. The parent or legal guardian of the applicant must be an Active Member, or a Member of the Salesmen's Division of the Board, and have been such for a period of not less than two years at the time the application is made. Candidates with an overall average of less than 75% will not be considered. The successful applicants will be selected primarily on the basis of academic standing. Apply at the University of British Columbia, Student Awards Office, local college or post secondary institution, before May 15th.

Retail Clerks Union, Local 1518, Scholarships

Retail Clerks Union, Local 1518, offers five scholarships of $800 each to students beginning or continuing studies in a full academic program of studies at the University of British Columbia, University of Victoria, Simon Fraser University, BC Institute of Technology, or at a Regional College in British Columbia. Normally, the awards will be made to the applicants with the highest standing in the final examinations. Students entering from Grade 12 must write a full set of examinations conducted by the Department of Education. To be eligible, a candidate must be a member, or the son, daughter, or legal ward of a member of
the Union in good standing. Those who wish to be considered must give full details of their own or their parent's membership in the Union. Three awards are available for students entering university, and two for a student continuing their university studies. Apply through the Student Awards Office, University of British Columbia, local college or post secondary institution, before May 15th.

Retail, Wholesale Union, Local 517, Scholarship
This scholarship of $250 is offered to dependants or legal wards of members of Local 517. It is open in competition to applicants who are proceeding from Grade 12 to any accredited university or college in BC, in a full program leading to a degree or diploma. To be eligible for consideration, an applicant must have a satisfactory academic standing (normally 75% or higher average). In the selection of the winner, the basic factor will be the academic standing of the applicant. Should there be a tie, the financial need of the applicant and his/her family shall be the deciding factor. The winner will be selected in consultation with the Union. Apply through the University of British Columbia Student Awards Office, local college or post secondary institution, before May 15th.

Telecommunications Workers Union Scholarships
Three scholarships in the amount of $750 each are made available by the Telecommunications Workers Union, for sons and daughters of members, with at least 12 months continuous service (or of deceased members) with the same service. They are open in competition to students proceeding in the Fall from Grade 12 to a full program of study at the University of British Columbia, the University of Victoria, Simon Fraser University or the BC Institute of Technology. To be eligible for consideration, a candidate must have an overall average of at least 75%. Candidates will be considered either on the basis of their high school transcript, or on the basis of the January or June government examinations conducted by the BC Ministry of Education. The winners will be selected by the University of British Columbia in consultation with the Union, from those who so qualify. In the final selection, a major factor will be the financial circumstances of applicants and their families. Applications must contain details of family service with the Union and other information. Apply at University of British Columbia Student Awards Office, local college or post secondary institution, before May 15th.

Telecommunications Workers Union
Thomas Ward Stanley Memorial Scholarship - The Telecommunications Workers Union offers a scholarship of $1,000 to sons and daughters of members (with at least twelve months continuous service) or of deceased members (with the same length of service). It is open in competition to students proceeding in the Fall from Grade 12 of secondary school to a full program of studies at the University of British Columbia, University of Victoria, Simon Fraser University, BC Institute of Technology, or any accredited regional college in BC. To be eligible for consideration a candidate must have an overall average of at least 75% in the subjects of the grade in which he or she is registered. Candidates will be considered on the basis of either standing received by high school graduation or in the January or June scholarship examinations conducted by the Ministry of Education. The winner will be selected by the University of British Columbia in consultation with the union, from those who so qualify. In the final selection, a major factor will be the financial circumstances of applicants and their families. Applications must contain details of family service with the Union and other pertinent information. The successful applicant will not be eligible for any other Telecommunications Workers Union Scholarships. Apply at Student Awards Office, University of British Columbia, local college or post secondary institution, before May 15th.

Vancouver Sun Special Scholarship for Carriers
The Vancouver Sun offers annually a scholarship of $500 to a student proceeding in the Fall from Grade 12 to the first year at the University of British Columbia, the University of Victoria, or Simon Fraser University, in a full program leading to a degree in any field. To be eligible, an applicant must have been a carrier for The Vancouver Sun for at least two years, and must have obtained an overall average of at least 75% based on the final secondary school transcript.

The scholarship will be awarded to the eligible applicant who, in the opinion of the Selection Committee, is the most outstanding in combining high scholastic attainment with achievement in one or more areas such as: service to the school and community; writing, drama, fine arts; debating and public speaking; sports. A winner who, in successive years of his undergraduate studies, obtains and maintains a 75% standing overall will be eligible for renewals of $500 per year until graduation, not exceeding a total of five payments in all.

All candidates must complete the General Application for Scholarship Form obtainable from the Student Awards Office, University of British Columbia, Vancouver, BC, or a local college or post secondary institution. The completed application,
accompanied by the service certificate of the Vancouver Sun, must be received by Simon Fraser University not later than May 15th.

The winner of this scholarship, may accept other awards offered other than The Vancouver Sun Scholarships for Carriers.

Vancouver Sun Scholarships for Sun Carriers

The Vancouver Sun offers annually two scholarships of $500 each to students proceeding from Grade 12 to the first year of BC Institute of Technology, the University of British Columbia, the University of Victoria, Simon Fraser University or Trinity Western University. To be eligible, applicants must have been carriers of the Vancouver Sun for at least two consecutive years. The awards will normally be made to the students with the highest standing based on their final secondary school transcript but in no case will an award be made to a student who obtains a standing of less than 75%. Winners of these scholarships who, in successive years of their undergraduate courses maintain a 75% standing overall will be eligible for renewals of $500 a year until graduation, not exceeding a total of five payments in all. Holders of this scholarship will not be precluded from enjoying the proceeds of other awards, however, a student may not simultaneously hold this scholarship and the Vancouver Sun Special Scholarship for Carriers.

A student who wishes to be considered for one of these scholarships must apply by letter to the Student Awards Office, University of British Columbia, Vancouver, BC, or a local college or post secondary institution, not later than May 15th. The letter of application must be accompanied by the service certificate of The Vancouver Sun.

Hon. W.C. Woodward University Memorial Scholarships

These five scholarships, each of $1,000 per year are renewable annually in the same amount at the beginning of each undergraduate year up to a maximum of five payments in all and are offered in competition to sons, daughters, and legal dependants of regular full-time staff, regular part-time staff, or retired staff (retired on store pension), and of deceased staff (who died while a Woodward's regular full-time staff member). These scholarships are available to those attending either the University of Alberta, the University of Calgary, or the University of Lethbridge, the University of British Columbia, the University of Victoria, or Simon Fraser University. They are open to applicants beginning university attendance for the first time, and entering from Grade 12 of secondary school (or any other source provided that they are qualified for admission). Alberta candidates must write the Provincial examinations, and BC candidates the Government Scholarship Examinations, conducted by the appropriate Provincial Department of Education. Awards will be made on the basis of (a) academic standing, (b) activity and interest in youth programs, organizations and athletics within school and community, and (c) personal qualities, character, and demonstration of citizenship, leadership, and service during attendance at school. Annual renewals are subject to maintenance of satisfactory academic standing, progress and conduct. Application forms are available from the Personnel Offices of all Woodward's Stores from February 1st onwards and must be completed and returned to Woodward's by July 15th. Applicants must include the official transcript of their secondary school record issued by the Department of Education of their Province.

External entrance scholarships for Applied Sciences students

Dr. Gordon L. Diewert Memorial Entrance Scholarship

A $700 scholarship will be awarded in the Fall semester 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 school.

External entrance scholarships for Education students

William Gray Alan J. MacSween Scholarship

Six scholarships of $200 each are offered by the North Vancouver Teacher's Association to students proceeding to studies at a university toward a degree or certificate in the teaching field. One scholarship will be awarded to a graduate of each of the following: Argyle Secondary School, Carson Graham Secondary School, Handsworth Secondary School and Windsor Secondary School. The awards will be made on the basis of academic standing, personal qualities and character, interest and participation in school and community affairs, and aptitude for teaching. Letters of application giving information pertinent to the above qualifications and accompanied by two letters of recommendation, must be submitted to: The Scholarship Committee c/o the Principal, of any of the above-named schools, North Vancouver, not later than June 1st.
Externally administered Scholarships for Continuing Students

External scholarships for all students
External scholarships for Applied Sciences students
External scholarships for Arts students
External scholarships for Business Administration students
External scholarships for Education students
External scholarships for Science students

For scholarships in this section, students must apply through the appropriate agency as indicated.

External scholarships for all students

BC Hydro Scholarships
BC Hydro is offering $1,000 scholarships to Environmental/Resource Science and Commerce students. As well, a $1,000 Power Smart scholarship is available for a student in any faculty who has completed an energy conservation project/paper. BC Hydro's Scholarship Committee will select candidates who have/are:

- completed second year in good academic standing
- a balanced lifestyle
- good written communication skills
- innovative
- committed to the protection of the environment and efficient and safe use of electricity

Application forms may be obtained from the applicable department. Send the completed form, transcript and reference letter to BC Hydro by November 1st.

B'nai B'rith Women Centennial Chapter 1022 Scholarships
A scholarship of $250 is offered annually to members of the Hillel or sons and daughters of B'nai B'rith members. It is open to competition to students who have successfully completed at least one year at Simon Fraser University, the University of British Columbia or Vancouver Community College (Langara) by June 30th and are continuing studies at any of the three institutions. To be eligible for consideration a candidate must have an academic average of at least 75% with clear standing in each subject. The application must be accompanied by a transcript of all post-secondary studies completed. Apply at your local college or university before May 15th.

CBIE Commonwealth Scholarship and Fellowship Plan
Field of study: Varies with country of tenure but normally unrestricted.
Value: Normally includes: return travel, tuition, maintenance allowance, allowance for books and equipment, clothing allowance and in some instances a marriage allowance.
Number: Varies.
Duration: Normally two academic years; however, may be extended or renewed depending on the specific country.
Conditions: Applicant must have an undergraduate degree from a recognized university and be from a Commonwealth country or British Protectorate and normally reside in a Commonwealth country.
Where tenable: Any of the following other than applicant's own: Australia, Canada, Ghana, Hong Kong, India, Jamaica, New Zealand, Nigeria, Sri Lanka, Trinidad and Tobago, Uganda, United Kingdom.

CIP Forest Products Incorporated, Tahsis Pacific Region Scholarship
CIP Forest Products Incorporated, Tahsis Pacific Region offers annually a scholarship of $1,000 to a student beginning or continuing studies at the University of British Columbia, the University of Victoria, or Simon Fraser University. This scholarship is open to competition to sons and daughters of employees of the Company proceeding in the fall to studies leading to a degree in
any field. This scholarship is also open to students who intend to proceed to a regional college or the British Columbia Institute of Technology under the following qualifying conditions.

- That the applicant must take two consecutive semesters of work at the regional college.
- That the applicant must take a full program of work each semester in courses that will give the student the equivalent of one full year of university credit at one of the universities in BC
- That the courses taken must be in a program that will lead to a degree offered by one of the universities in BC

The applicant must state the name of the applicant's parents, one of whom must be currently employed by the Company, or have been employed for a minimum of one full year and then retired. Brief details of their service with the Company should also be supplied. The award will normally be made to the candidate with the highest standing. Apply at University of British Columbia, Student Awards Office, or any other college or post secondary institution before May 15th.

Harold Arvid Christenson Memorial Scholarship Fund

The late Harold Arvid Christenson, former manager of Pacific Coast Fishermen's Mutual Marine Insurance Company, bequeathed scholarships for sons, daughters or legal wards of past or present members and employees (or persons to whom a past or present member or employee stood In Loco Parentis) of the company.

Applicants must be enrolled full-time at a post-secondary educational institution.

The number and amount of these scholarships will be determined by the board of directors of the company.

The application deadline is September 1st.

Application forms are available from the company at: Suite 200 - 4259 Canada Way, Burnaby, BC V5G 1H1, Telephone: 438-4240

Gulf and Fraser Fishermen's Credit Union Scholarship

The Gulf and Fraser Fishermen's Credit Union has established three annual scholarships of $500 each and three annual bursaries of $500 each. These will be disbursed by the Board of Directors of Gulf and Fraser Fishermen's Credit Union to worthy applicants who are either members, or sons or daughters of a member. Applicants are required to submit copies of their current transcripts of marks and the Gulf and Fraser Fishermen's Credit Union account number under which they are applying.

Icelandic Canadian Club of BC Scholarships

The Icelandic Canadian Club of BC has established a scholarship fund to provide financial assistance to students of Icelandic origin who are beginning or continuing a program of post-secondary education at an institution in BC.

Each year an attempt will be made to award two scholarships worth at least $100 each. The particulars of these awards are as follows:

- an award to a student who is beginning a program of post-secondary education and
- an award to a student who is continuing a program of post-secondary education.

These awards are tenable at the following institutions: University of British Columbia, University of Victoria, Simon Fraser University, BC Institute of Technology and all provincial colleges.

Application forms may be obtained after May 1, from: Dr. R.B. Helgason, Chairman, Scholarship Committee, 4668 Burke Street, S. Burnaby, BC or Mr. A.S. Oddsson, President, Icelandic Canadian Club, 7275 Willingdon Ave., Burnaby, BC

International Longshoremen's and Warehousemen's Union Undergraduate Scholarships

Three scholarships of $350 each are offered to members, and sons and daughters of members, in good standing, of the International Longshoremen's and Warehousemen's Union. The scholarships are open to students entering the University of British Columbia, the University of Victoria, or Simon Fraser University, who will continue in a full program of studies in the
Fall semester in an undergraduate faculty. Normally, these scholarships will be awarded to the candidates with the highest standing as determined by the results of the final sessional examinations conducted in April by the named universities. Candidates must notify the Student Awards Office, University of British Columbia, or any other college or post secondary institution, of their intention of competing, by May 15th. The donors reserve the right to withhold awards if the academic standing of candidates is not sufficiently high, or to re-award scholarships if winners receive other scholarships of substantial value.

Earl Kinney Memorial Scholarship
This scholarship in the amount of $750 has been made available by the Graphic Communications International Union, Local 525, to students enrolled in a full academic program of studies at the University of British Columbia, the University of Victoria or Simon Fraser University at the second year level or higher. To be eligible, an applicant must be a member, or the son, daughter or legal ward of a member in good standing of the Union. Those who wish to be considered must give full details of their own or their parents membership in the Union. The award will normally be made to the applicant with the highest standing as determined by the Awards Office, University of British Columbia or local college or post secondary institution. Apply at the University of British Columbia before May 15th.

Thomas P. Mayes Scholarship
In memory of Thomas P. Mayes, who until his death in 1968, served as secretary of the Union, the International Longshoremen's and Warehousemen's Union offers an undergraduate scholarship of $350 to members, and sons and daughters of members, in good standing. The terms and conditions of award are the same as for the three International Longshoremen's and Warehousemen's Union Undergraduate Scholarship, described elsewhere in this section.

B.G. Robinson Scholarship Fund
An annual scholarship valued at $500 is available to

- staff or family members of staff employed by provincial or federal criminal justice agencies (ie. police, courts, corrections)
- persons or family members employed by agencies (non-governmental) active in the criminal justice field
- persons who have demonstrated a commitment to the criminal justice system through voluntary activities
- offender pursuing post-secondary education
- students pursuing studies in programs to enhance their careers in criminal justice, enrolled at any post secondary institution in BC.

For further information contact: Selection Committee, B.G. Robinson Fund, 4545 Montford Avenue, Victoria, BC V8N 3W6.

Rotary Foundation Scholarships
Nature and Purpose of the Awards - Undergraduate scholarships, the newest educational activity of The Rotary Foundation, are awarded to outstanding young men and women for one academic year of undergraduate study abroad.

Terms of the Award - A candidate for a 1995-96 scholarship must be: unmarried; between the ages of 18 and 24 inclusive as of March 1st in the competition year; and have completed two years of undergraduate university-level work, but not have attained the bachelor's degree or equivalent at the time the student begins the scholarship year. The student must be a citizen of the country of residency and where the sponsoring Rotary Club is located.

In this and all other programs of The Rotary Foundation, a Rotarian, a dependent of a Rotarian, a child, stepchild, grandchild, brother or sister of a Rotarian, or any spouse thereof, is ineligible for an award.

Application - Application for an Undergraduate Scholarship must be made through a Rotary Club in the district in which the applicant's permanent residence is located, or in the district in which is located the school at which he is studying at the time of his application. The sponsoring Rotary Club will provide the necessary application forms and explanatory literature.

Rhodes Scholarships
Eleven scholarships are open for male and female Canadian students and will be awarded annually in late November. Applications must be received by October 25th in Financial Assistance.
These scholarships are tenable at the University of Oxford, England, and the value is at least £10,000 per year. A maintenance allowance of at least £3,810 per year is provided to the scholar, in addition to which all fees are paid directly to the University and the scholar's College. Reasonable travel expenses to and from Oxford are also provided. They are granted for two years, with the possibility of a third year. Scholars may follow courses of study of their own choice. They are required to go to Oxford in October of each year.

Selection is made on the basis of school and college records without written examinations. The qualities which will be considered in making the selection are: literary and scholastic attainment; fondness of, and success in outdoor sports; qualities of truthfulness, courage, devotion to duty, sympathy for and protection of the weak, kindliness, unselfishness, and fellowship; exhibition of moral force of character; and of instincts to lead and take an interest in one's contemporaries. Qualities of both character and intellect are the most important requirements for a Rhodes Scholarship; these are what the Selection Committees will seek. Financial need does not receive special consideration.

The eleven scholarships are allotted: three to the Western Region (Manitoba, Saskatchewan and Alberta); two to each of Ontario, Quebec and the Maritime Region (New Brunswick and Nova Scotia); and one each to British Columbia and Newfoundland.

Conditions of Eligibility

A candidate must:

- be an unmarried Canadian citizen or British subject, and have been ordinarily resident in Canada for at least five years by October 1st. A Rhodes scholarship is forfeited by marriage after election, or during a scholar's first year of residence. Permission to marry without loss of the scholarship may be given by the Rhodes Trustees during a scholar's second or third year;
- be at least 19 but under 25 years of age on October 1st;
- have completed at least three years of university training by October 1st.

Candidates may compete in a province prescribed under either a) or b) below:

a) The province in which they are ordinarily resident. If a candidate is ordinarily resident in the Northwest Territories, application may be made in a province under b) or, if there is no such province, in Manitoba, Saskatchewan or Alberta. If a candidate is ordinarily resident in Prince Edward Island, application may be made in a province under b) or, if there is no such province, in Nova Scotia or New Brunswick.

b) Any province in which they have attended a university provided that, if a candidate is ordinarily resident outside Newfoundland, an application may not be made in that province.

Subject to ratification by the Rhodes Trustees, Selection Committees are responsible for deciding whether candidates comply with the foregoing conditions, and for making the nominations.

Further information and application forms may be obtained from Financial Assistance, from the Office of the General Secretary for the Rhodes Scholarships in Canada, PO Box 48, Toronto-Dominion Centre, Toronto M5K 1E6 or from the Provincial Secretaries.

Vancouver Police Force Scholarships
Two scholarships, in the amount of $250, have been established to assist promising and deserving children of members of the Vancouver Police Force to continue their studies beyond the level of the secondary school at the University of British Columbia or Simon Fraser University. Academic standing and financial need will be taken into consideration. Application forms may be obtained from the Secretary, Vancouver Police Force Scholarship Committee, 312 Main Street, Vancouver, BC. The completed application, together with the required accompanying letter, must be received by the Secretary not later than June 30th.

External scholarships for Applied Sciences students

Engineering Institute of Canada
Bursaries or scholarships are offered annually to students who have graduated from a high school located on Vancouver Island and who have completed a first year of a degree course in engineering at an institute of higher education. Further information
may be obtained from the Engineering Institute of Canada, Vancouver Island Branch Scholarship Society, Box 5343 - Station "B", Victoria, BC V8R 6S4. Applications should be obtained and submitted to the above address by July 1.

Kamloops Foundation (Dr. John Willoughby Scholarship)
A scholarship of $1,000 is available to a full-time undergraduate student who graduated from a secondary school in the Kamloops area. Areas of study must include any of the following: pre-med program, clinical psychology, and kinesiology. For further information please contact: Kamloops Foundation, PO Box 15, Kamloops, BC V2C 5K3.

Society for the Advancement of Materials and Process Engineering Scholarship
An annual scholarship of $1,000 is available to a third or fourth year student majoring in Science or Engineering who intends to pursue a program in Material and Process Engineering (or related subject) during the final year of undergraduate or first year graduate studies. Seniors must show proof of being accepted to a graduate school. Applications must be accompanied by a departmental recommendation and postmarked no later than May 15th, mailed to: Ken Stephens, Suite 210, 1021-112th Avenue NE, Bellevue, WA 98004.

**External scholarships for Arts students**

BC Cultural Fund Scholarships (Province of BC)
The Province of BC provides grants/scholarships for performance in the following disciplines: drama, dance, music, visual arts and crafts, creative writing and arts administration. These grants are made for the purpose of improving qualifications or skills. Applications are evaluated on the basis of:

- performance and achievements of the individual
- financial need
- nature and length of proposed program of study

Preference will be given to applicants who have resided in BC for at least three years prior to application.

Applications must be submitted before June 30th to: Administrator, Grant Funds, BC Cultural Fund, Ministry of Provincial Secretary and Government Services, Parliament Buildings, Victoria, BC V8V 1X4.

BC Historical Federation Scholarship
The British Columbia Historical Federation awards a $500 scholarship annually to a student completing the third or fourth year at a British Columbia college or university. To apply for the scholarship, candidates must submit: 1) a letter of application; 2) an essay of 1,500-2,000 words on a topic relating to the history of British Columbia. The essay must be suitable for publication. The winning essay will be published in the "B.C. Historical News"; 3) letters of recommendation from two professors.

The applications must be submitted before April 30th to: Ann Yandle, 3450 West 20th Avenue, Vancouver, B.C. V5S 1E4.

Burnaby Historical Society Scholarship
This scholarship, given by Dr. and Mrs. Blythe Eagles in honour of Evelyn Salisbury, is an annual award of approximately $1,000 to a fourth year undergraduate student who is enrolled in a majors or an honours program that specializes in the history of British Columbia. Candidates should apply in writing, outlining their studies to date, including a current academic transcript and letters of recommendation from two professors. Applications are to be submitted by June 15th to: The Burnaby Historical Society Scholarship Committee, 6501 Deer Lake Avenue, Burnaby, BC, V5G 3T6.

Maple Ridge Arts Council
A $1,000 bursary is available to a second, third or fourth year Fine Arts student in a degree or diploma program. Applicants must have graduated from School District No. 42 senior secondary schools. It is also open to a mature student wishing to further his/her Fine Arts Education, but the applicant must have resided in the Maple Ridge area for five years. Closing date is June 30th. Please contact the Maple Ridge Arts' Council, Box 331, Maple Ridge, BC, V2X 7G2.
External scholarships for Business Administration students

Ellen Bell YMCA Memorial Scholarship
Ellen Bell will be remembered for the boundless energy, intelligence, kindness and willingness to commit herself to the betterment of the community. A scholarship in the amount of $700 is available to a student who demonstrates the above qualities and who is pursuing a career in marketing and advertising. Applications must be in writing, giving full particulars together with the reason for applying (in 500 words or less) along with letters of reference. Deadline: March 1. Forward applications to: Ellen Bell YMCA Scholarship Committee, YMCA of Greater Vancouver, 955 Burrard Street, Vancouver, BC V6Z 1Y2

Chew Ping Chuen Memorial Scholarship
A $500 scholarship is available annually to a full-time student in third and fourth year of Business Administration studies/program. The applicant must have graduated from Lillooet Secondary School. Applications will be received between February 1 and May 1 of each year along with a copy of a most recent transcript, letter or introduction, and resume, and should be forwarded to: Chew Ping Chuen Memorial Scholarship Committee, 3278 East 45th Avenue, Vancouver, BC V5R 3E5

Ernst, Young Service Award
A service award offered annually by Ernst, Young (a member of Arthur Young International) is available to undergraduate Business Administration students intending a career as a chartered accountant. Students who have completed at least 90 credit hours and are entering their graduating year are eligible for this award.

The award will be granted to a student demonstrating academic excellence, leadership, teamwork and communication skills. The award will include employment in the summer before graduation and payment of tuition fees for the final year. Applications should be submitted no later than October 31st.

Eligible students should submit a letter of application, resume and copy of their most recent transcript directly to the following address: Clarkson Gordon Service Award, Clarkson Gordon, PO Box 10101, 700 West Georgia Street, Vancouver, BC V7Y 1C7 Attention: F.G. Withers.

External scholarships for Education students

Dr. H.B. King Memorial Scholarship in Education
This scholarship of $300 has been established by the BC Association of District Superintendents and Inspectors of Schools as a memorial to Dr. H.B. King, who from 1939-1945 was Chief Inspector of Schools for British Columbia. This scholarship will be awarded to a student who is proceeding to a degree or certificate in the teaching field and will register in a full course of study in the second year, following first year university, in any recognized Faculty of Education in a BC university. The award will be made on the basis of academic standing, personal qualities, aptitude for teaching, and other factors. The application form may be obtained from the Student Award Office, University of British Columbia, or any other college or post secondary institution.

External scholarships for Science students

Society for the Advancement of Materials and Process Engineering Scholarship
An annual scholarship of $1,000 is available to a third or fourth year student majoring in Science or Engineering who intends to pursue a program in Material and Process Engineering (or related subject) during the final year of undergraduate or first year graduate studies. Seniors must show proof of being accepted to a graduate school. Applications must be accompanied by a departmental recommendation and postmarked no later than May 15th, mailed to: Ken Stephens, Suite 210, 1021-112th Avenue NE, Bellevue, WA 98004.

Externally administered Bursaries
External bursaries for all students
External bursaries for Education students
External bursaries for Science students

Students applying for bursaries listed in this section should make application through the appropriate agency as indicated. Do not apply on Simon Fraser University bursary forms.
External bursaries for all students

British Columbia Forest Products Limited
The Company provides up to $10,300 per year for the payment of bursaries, each with a maximum value of $1,200 to the qualified legal dependants of Company Employees.

Bursaries are available to students beginning or continuing studies in the Fall in a full undergraduate program of studies at the University of British Columbia, Simon Fraser University or University of Victoria, and for dependants of Alberta employees at an approved university in Alberta. Awards will be made at the discretion of the University to students selected on the basis of their financial need. Winners of the Company's Entrance Scholarships will not be permitted to receive a Company bursary in the same year.

All candidates must apply on the application for Scholarships and Bursaries form, which may be obtained from the University Awards Office, University of British Columbia or local college or post secondary institution. This application must be received by the University no later than May 15 and must contain the necessary details of family service with the Company.

BC Government and Service Employees Union
Ten $1,000 scholarships are available each year to students who are BCGEU members or relatives of members of staff. Applicants must be registered full time in a post secondary program at a BC education institution with a satisfactory academic record. Deadline for applications is February 28th. Please contact your local area BCGEU office for further details regarding these awards.

BC Indian Arts and Welfare Society Memorial Bursary
A bursary of $100 will be awarded annually by the BC Indian Arts and Welfare Society in memory of those Indian Canadians who gave their lives in either World War. Native Indian applicants must be from the Province of BC and must be planning to enter one of the established universities or colleges in BC, or a recognized technical school or other training centre. The award will be made by the Executive Committee of the BC Indian Arts and Welfare Society. If no application is received from a student entering first year university, then the bursary may be awarded to a student enrolled in any of the senior years. Apply to: The Honorary Secretary, BC Indian Arts and Welfare Society, c/o Provincial Museum, Victoria, BC.

Canadian Federation of University Women of South Delta
Bursaries are available for women who wish to enroll in, return to, or continue to study in a college or university. Applicants must be residents of South Delta (Tsawwassen/Ladner). For further information please contact: CFUW of S. Delta, c/o Doreen Neshitt, 303 - 1172 55th Street, Delta, BC, V4M 4C3.

Canadian National Educational Awards
Five Bursaries valued at $2,000 each are available to Native Indian students who meet the following requirements.

- be in need of financial assistance
- demonstrate serious interest in a career in transportation
- provide proof of acceptance into an eligible post-secondary institution
- maintain full-time registration status leading to a degree
- maintain satisfactory academic standing

Students should apply by October 1st of each year to CN Native Awards Program, PO Box 8100, Montreal, Quebec H3C 3N4.

Hugh Christie Memorial Bursary
A $500 bursary is available to a student who is pursuing a career in Corrections, International Development, Social Work or YM-YWCA. The student must be full-time and taking courses in any of the following fields of study: Physical Education, Recreation, Social Work, Criminology or any directly related course work.

Application must be in writing giving full particulars together with an essay of 500 words or less explaining the reason for applying for the bursary. Apply to: Mr. Graham Christie, Chairman, South Slope Family YMCA, 282 West 49th Avenue, Vancouver, BC V5Y 2Z5.
Kit Davison Bursary Endowment Fund
This fund is for students who have muscular dystrophy and are registered with the association and wish to continue their education in post-secondary education in BC. Students must be residents of BC. Applicants should apply to the Muscular Dystrophy Association of Canada by August 1st of each year.

Hospital Employees Union, Local 180 (Vancouver General Unit) Bursaries
Two bursaries of $350 each are offered annually in the Fall to entering students proceeding from Grade 12 into a full program of studies in any field leading to a degree, or leading to a diploma in Technology at the BC Institute of Technology. To be eligible, an applicant must be the son or daughter of an active member of the Hospital Employees Union, "active" being interpreted as on the staff of a hospital within the jurisdiction of Local 180, or on the staff as of January 1st of the year of the award, but since superannuated. Applications must clearly establish connection with the Union. Applications may be obtained from Hospital Employees Union, #800 - 1111 West Georgia Street, Vancouver, BC V6E 3G7.

Independent Order of Oddfellows Bursaries
Bursaries of $400 each, provided by the Grand Lodge of BC, IOOF, the Grand Encampment, and the Rebekah Assembly, are available for students in any year of any faculty. The awards will be made by a joint committee consisting of two representatives from each of the Grand Bodies. All applicants must have direct connection with one or more branches of the Order, through parents, grandparents, or close relatives. Special consideration will be given to applicants with financial need. Full details of the awards and application forms may be obtained from the Secretary of any Oddfellows Lodge or Rebekah Lodge, IOOF. Applications should be submitted to the Oddfellows or Rebekah Lodge by May 1st so that they may be received by the Committee not later than May 15. All applications must be sponsored by an Oddfellows Lodge, Rebekah Lodge, or Encampment.

Les King Memorial
To honor the memory of Les King, the late president of Van-Tel Credit Union, a Bursary of $500 will be awarded to the sons, daughters, and legal dependants residing in British Columbia, of members of Van Tel Credit Union. It is open to competition to students proceeding from Grade 12 into a full program of studies at the University of British Columbia, University of Victoria, Simon Fraser University, or any accredited post-secondary institute within the Province of British Columbia. To be eligible for consideration a candidate must have an average of at least 70%. The winner will be selected by the University of British Columbia, in consultation with Van-Tel Credit Union. From those who so qualify, in the final selection, a major factor will be the financial circumstances of the applicants and their families. Applications and further information may be obtained from the Awards Office at the University of British Columbia, Vancouver, BC V6T 1W5. Applications must be received by the University of British Columbia or local college or post secondary institution on or before May 15.

MacMillan Bloedel Limited Bursaries
MacMillan Bloedel Limited offers annually a number of bursaries to part-time employees who will be returning for further study at the University of British Columbia, the University of Victoria, Simon Fraser University, or the BC Institute of Technology. The total amounts of such bursaries shall not exceed $2,500 in any one year. Amounts of individual awards are not fixed. Selection of recipients will be determined by the student's interest in the forest industry, success during part-time employment, and financial need. Further details may be obtained by the student from the Personnel Supervisor at the Division of employment.

Meville, Steven Andrew Memorial Bursary
Two $500 bursaries are available to graduates of Peter Skene Ogden Secondary School in 100 Mile House, BC. Applicants must have completed a minimum of one year of academic, technical or vocational training at a post-secondary institution. Preference will be given to students who participated actively in Ogden's peer helpers program or extra curricular school activities. Applications are available from Mrs. Nancy Meville, Box 636, 100 Mile House, BC V0K 2E0. Deadline: July 1.

Leo Morris Memorial Bursary
To honor the memory of Leo Morris, late treasurer of Van-Tel Credit Union, a Bursary of $500 will be awarded to the sons, daughters and legal dependants residing in British Columbia, of members of Van Tel Credit Union. It is open to competition to students proceeding from Grade 12 into a full program of studies at the University of British Columbia, University of Victoria, or
any accredited post-secondary institute within the Province of British Columbia. To be eligible for consideration a candidate must have an average of at least 70%. The winner will be selected by the University of British Columbia, in consultation with Van-Tel Credit Union. From those who so qualify, in the final selection, a major factor will be the financial circumstances of the applicants and their families. Applications and further information may be obtained from the Awards Office at the University of British Columbia, Vancouver, BC V6T 1W5. Applications must be received by the University of British Columbia or local college or post secondary institution on or before May 15.

Pacific Coast Fishermen's Mutual Marine Insurance Company
Bursaries of $600 are available to sons, daughters and legal wards of past or present members (or persons to whom a past or present member stood In Loco Parentis) of Pacific Coast Fishermen's Mutual Marine Insurance Company. Applicants must be enrolled full time at a post-secondary educational institution. Application deadline is September 1st; forms may be obtained from the company: #200-4259 Canada Way, Burnaby, BC V5G 1H1. Tel: 438-4240.

Province of BC International Year of Physically Challenged Persons Bursaries
In recognition of the International Year of Physically Challenged Persons, these bursaries were created to financially assist students with disabilities and will be awarded on merit and the basis of financial need. Several annual bursaries of $500 each are available. Applicants must be residents of BC, Canadian Citizens or Landed Immigrants.

For further information please contact: Grant Co-ordinator, BC Paraplegic Foundation, 780 SW Marine Drive, Vancouver, BC V6P 5Y7.

Retail, Wholesale Union Local 580 Bursaries
A bursary of $500 is offered by the Retail, Wholesale Union Local 580 to active members, or sons, daughters, and legal wards of active members of the Union in good standing. They are open in competition to applicants who are proceeding from grade 12 to studies in a full program leading to a degree in any field. Candidates must have satisfactory academic standing (normally an overall average of at least 65% in grade 12). In the selection of the winners, the basic factor will be the financial need of the candidates and their families. The winners will be selected in consultation with the union. Apply through the University of British Columbia or local college or post secondary institution before May 15th.

Retail, Wholesale Union, Local 470 Bursary
One bursary of $250 is offered by the Retail, Wholesale Union, Local 470 to active members, or sons, daughters and legal wards of active members of the Union in good standing. It is open in competition to applicants who are proceeding from Grade 12 to begin studies at the University of British Columbia, the University of Victoria, or Simon Fraser University, in a full program leading to a degree in any field. A candidate must have satisfactory academic standing (normally an overall average of 65% in grade 12). In the selection of the winners, the basic factor will be the financial need of the candidates and their families. The winners will be selected in consultation with the union. Apply through the University of British Columbia before May 15th.

Rixon Rafter Bursary Fund
This fund was established in honor of the late Rixon Rafter, a graduate of the Ontario School for the Blind (now the W. Ross Macdonald School) in Brantford, Ontario. Mr. Rafter became a successful newspaper publisher. Interest from the fund provides assistance to needy, registered blind students involved in academic or educational pursuits. In most instances, an amount of $150 to $300 is provided; under exceptional circumstances, this may be increased to a maximum of $500. In British Columbia, applications are to be directed to The Canadian National Institute for the Blind, Vocational Counselling and Employment Services Department, 350 East 36th Ave., Vancouver, BC V5W 1C6.

M.C. Robinson and Donald Buckland Memorial Fund
The M.C. Robinson and Donald Buckland Memorial Fund is sponsored by the Canadian National Institute for the Blind. Captain Merrill C. Robinson, blinded since 1917, was the Director of The Canadian National Institute for the Blind, BC-Yukon Division, from 1929 to 1964. His contribution towards the development of CNIB and services to the blind of BC-Yukon will long be remembered. Donald Channing Buckland, a graduate and distinguished faculty member of the University of British Columbia, was himself overtaken by blindness a few years before his untimely death. An annual award of $200 is available from this fund to any blind, full-time or post-secondary student, having established permanent residence in British Columbia. Requests should be directed to the Executive Director of the BC-Yukon Division, CNIB, 350 East 36th Avenue, Vancouver, BC V5W 1C6.
Royal Arch Masonic Order Bursaries
Several bursaries, up to $500 each have been established by the Royal Arch Masonic Order to give assistance to children of members in good standing, or of deceased members, of Chapters of the Order in BC and the Yukon Territory. Qualifying candidates will be required to have good academic standing and should submit a copy of their current transcript with applications. However, the primary consideration will be the financial need of the applicants.

Application forms may be obtained from the office of the Grand Chapter of Royal Arch Masons of BC, Room 104, 1495 West 8th Avenue, Vancouver, BC, or from Secretaries of the Chapter in BC and the Yukon and completed and returned to the Grand Chapter office by July 15th.

Royal Canadian Legion (Pacific Command) Bursaries
A number of awards are offered annually for students proceeding from high school to university and to students taking a full course-load (12 hours or more) in second, third, and fourth year university. They are awarded on the basis of academic standing, financial need, and participation and achievement in school and community affairs. Preference is given to sons and daughters of deceased, physically challenged, or other veterans. Further information and application forms may be obtained from Pacific Command, The Royal Canadian Legion, 3026 Arbutus Street, Vancouver, BC Completed applications, including letters of reference, must be received by Pacific Command not later than May 31st.

Barry Sullivan, QC Memorial Bursary Fund
A bursary of $1,000 will be awarded annually in each of one or more of three disciplines by the Barry Sullivan, QC Memorial Bursary Fund Society in honour of the memory of Barry Sullivan who passed away March 21st, 1988. Throughout his professional career and personal life, he contributed significantly to the three disciplines in which he held keen interest: law, social work as it relates to abuse of children, and education. His legendary endeavours included a report and recommendations on Child Abuse, the Sullivan Commission on Education and as a counsel and teacher in Criminal Law.

The funds will be awarded to students who display a combination of financial need, academic achievement, community involvement, dedication, and imagination in their studies.

Applications must be submitted by October 31st to Thomas Russell, c/o Barry Sullivan, QC Memorial Bursary Fund Society, Suite 500 North Tower, 5811 Cooney Road, Richmond, BC, V6X 3M1. Successful candidates will be notified prior to December 31st.

University Women's Club of Comox Valley
A $500 bursary is available to a female graduate of a senior secondary school in the Comox Valley, who has completed at least one year of an accredited course of study at a Canadian university or college. Applications must be submitted by July 1st of each year. For information, please contact Jacqueline Kennett, Box 296, Union Bay, BC, V0R 3B0.

War Amputations Association of Canada, Vancouver Branch, Bursaries
Twenty bursaries of $200 each, provided by the War Amputations Association of Canada, Vancouver Branch, are offered to children of active members of the Branch. These bursaries are available to selected students of Simon Fraser University and other recognized institutions of learning. Applicants must be enrolled in full-time courses of study past Grade 12 level, and have a clear academic record in the year most recently completed. Only three War Amputation Bursaries may be awarded to any one student.

White Rock University Women's Club Bursary
Bursaries are available to female students who are entering their third year of a degree program. Applicants must have graduated from School District #36 senior secondary schools and demonstrate financial need. Please contact: Mrs. J.L. Scobie, 6595 Cabeldu Crescent, Delta, BC, V4E 1R2 for application forms. Closing date for applications is September 30th.

White Spot Limited Bursary
One bursary of $1,000 is provided by White Spot Limited and its subsidiary companies for their employees, and sons and daughters of their employees, who have served with the firm for at least two years. This bursary competition is open to eligible students proceeding from Grade 12 to a full program of studies at the University of British Columbia, the University of Victoria, or Simon Fraser University. For purposes of qualification, “employees” shall include students employed part-time with the company while attending secondary school. The decision as to qualification by employment shall rest with the Company. In all
matters, winners will be selected by the Scholarship Committee of the University of British Columbia on the basis of academic standing and need for financial assistance. Candidates must a) write the standard departmental examinations conducted in June by the Department of Education, BC and obtain an overall average of at least 65% in these examinations; b) submit the special bursary form to the University of British Columbia or other post secondary institutions not later than May 15th. This form may be obtained after June 1st from the Student Awards Office, University of British Columbia. Winners will be considered for their second, third and fourth years of university attendance (up to graduation). However, renewals each year are not automatic and will be made only to those who file a new application, pass in all subjects with a minimum overall average of 65%, and have need for financial assistance.

External bursaries for Education students

Kootenay Society for Handicapped Children (Mary Machi Memorial Bursary)
This bursary is to be awarded to a deserving undergraduate student, who is presently studying in the field of Special Education or Mental Retardation, with the intention of continuing an education in that field. Applicants will be recommended to the Bursary Committee appointed by the Kootenay Society for Handicapped Children and this committee will make the final choice. Further information may be obtained from Financial Assistance.

External bursaries for Science students

Canadian Arthritis and Rheumatism Society Bursary Loans
The Canadian Arthritis and Rheumatism Society offers bursary loans up to $500 per annum to students qualifying for first, second or third year training in the School of Rehabilitation Medicine at the University of British Columbia. Conditional upon employment with CARS, repayment of the loan may be waived. Particulars and application form may be obtained from CARS, 895 West 10th Avenue, Vancouver, BC.

Externally administered Awards

External awards for Applied Sciences students

CIPS Computing Co-op Award
The Vancouver section of the Canadian Information Processing Society provides an award valued at $750 to a third or fourth year MSSC student who has a major or minor in Mathematics or Computing Science. Applicants must have at least a 3.00 CGPA and have completed at least two co-op terms. Please contact the applicable department for application procedures.

External awards for Arts students

Canadian Association of Geographers' Annual Award
The Canadian Association of Geographers will award in the Spring semester, a prize to the outstanding honors student in Geography. No application is necessary.

Prize of the French Consulate in Vancouver
Several book prizes and medals have been donated to Simon Fraser University to be awarded to students for outstanding achievement in French. Applicants must be recommended by the Simon Fraser University Department of French to the French Consulate in Vancouver.

External awards for Science students

Chemical Institute of Canada Prize - Vancouver Section
A $100 prize is available in January to the student with the highest aggregate grade in first year chemistry courses, who intends to major in Chemistry and has maintained a satisfactory academic standard. The prize will be presented by the Vancouver Section of CIC on the recommendation of the Chemistry Department. No application is necessary.
Externally administered Loans and Funds

British Columbia Youth Foundation Loan
The Foundation is prepared to make available to bona fide British Columbia residents under the age of 30, interest-free loans to assist in the pursuance of further education. This assistance is afforded to students who are not eligible for Canada Student Loans.

The Foundation will require a co-signer if this private loan is granted; normally, the student's parents would be asked to do this.

Further details may be obtained from Financial Assistance.

PEO Sisterhood Educational Loan Fund
Loans are available to women students in second to fourth year of a university course, and may be requested at any time. The maximum amount of a loan to any student is $2,000. Fourth year or graduate students may be granted loans and draw the maximum loan in one year. Undergraduates may apply for and be granted the maximum loan of $2,000 for two or more years of study, but may draw only $1,000 of the loan in one academic year. Students must complete satisfactorily one semester's work before making application. Interest at a 6% rate is to be paid annually, and the student is expected to begin payment of the principal as soon as she is out of university and employed. Further details may be obtained by contacting: Nancy E. Miller, 3590 West 20th, Vancouver, BC, V6S 1E7.

Royal Canadian Naval Benevolent Fund
This fund recognizes the need of financial assistance for educational purposes of former members of the Naval Forces of Canada and Canadian Merchant Navy Veterans. This program is not only for university but for vocational and other special training as well. Financial assistance for dependants is limited to cover tuition, student fees, books and supplies. For further information, please contact: Secretary-Treasurer, 63 Sparks Street, Room 608, PO Box 505, Station B, Ottawa, Ontario, K1P 5P6. Tel (613) 996-5087.

Government Administered Programs

Canadian Armed Forces Subsidisation Government Loans (Canada Student Loan/BC Student Assistance, Part-time BC Student Assistance)
International Student Loan
Work Study

Canadian Armed Forces Subsidization Plans

Admission Requirements
An applicant must be a Canadian citizen; be physically fit for enrollment 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 university.

How to Apply
Individuals interested in obtaining more information on, or wishing to make application 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 sum of money borrowed by a student who proves financial need on a promise to repay at some specified time.

Canada Student Loan/BC Student Assistance
The purpose of the Canada Student Loan/BC Student Assistance Program is to assist students whose resources are insufficient to provide the cost of full-time studies at the post-secondary level of education. Therefore, funds under the program are granted only where the financial resources available to students from parents, summer or other employment, part-time work, or other sources, are insufficient to meet their estimated educational costs. Normally, the funds provided under this program will be disbursed through a combination of the Canada Student Loan and BC Student Assistance. Some students in first or second year studies, may qualify for BC Grant Funding. A detailed booklet describing the program in full is available at Financial Assistance.
Eligibility
Applicants must be Canadian citizens or permanent residents (landed immigrants) to be eligible. Assistance will be provided to eligible students undertaking a minimum of 60% or 9 regular credit-carrying hours of a full program of study leading to a certificate, diploma or undergraduate degree or be a registered full time graduate student. The amount of assistance awarded will be based on assessed need as determined by the provincial authority.

The maximum amount of the Canada Student Loan each semester is $1,785. Eligible students, whose assessed need is higher than the maximum Canada Student Loan, may also receive BC Student Assistance up to a maximum of $1,887 each semester for students without dependants and $3,842 each semester for students with dependants.

A student in need of a Canada Student Loan/BC Student Assistance must first obtain an application form from Financial Assistance. The application must be completed carefully and accurately by the student, and where applicable, by the spouse or parent(s). If the student's application is approved, the student will receive in the mail a Notification of Award/Statement of Personal Responsibility from the Student Services Branch in Victoria. After receiving this Notification, the student's Canada Student Loan document will be available in Financial Assistance. This office will confirm registration and the student will then take the loan document to a lending institution for negotiation.

If the student is also eligible for BC Student Assistance, the Loan Certificate or grant will be available at Financial Assistance usually at the mid-point of the period of study for which assistance was awarded. Financial Assistance will confirm registration and the student will then take the Loan Certificate and/or cheque to a lending institution for negotiation. Students are advised to keep in constant touch with the bank, or lending institution, from which they secure their loans.

Students should note the Summary of Obligations on the reverse side of the loan certificate prior to negotiating the loan. Interest on the loan is paid by the Federal or Provincial Government as long as the student is registered as a full-time student. Students should contact their lending institution (bank, credit union etc.) for information regarding the current interest rate and repayment schedule for Student Loans. Students who have previously received Canada Student Loans or BC Student Loans, but who do not negotiate one for their immediate period of study, should submit a Schedule II and/or Certificate II to their lending institution in order to retain payment-free status. Students must be undertaking a minimum of 9 regular credit hours in the current semester, be a registered full time graduate student, or enrolled in a Co-op Education work term to be considered full-time for payment-free status. A copy of these forms may be obtained from the lending institution or Financial Assistance.

For appeals, reassessments or other concerns, please contact Financial Assistance.

The Provincial Government has a loan remission program available to some graduating students. For details contact: Student Services Branch, Ministry of Skills, Training and Labour, telephone 1-800-561-1818.

International Student Loans

United States Students
United States citizens or nationals attending Simon Fraser University are eligible to apply for a US guaranteed student loan. Application is made to a private commercial lender in the student's home state and the loan is insured by that state, a private non-profit agency or the federal government.

Students with permanent resident status may be eligible to apply for Canada Student Loans. See section International Students.

Students from other countries
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 scholarships once they have enrolled at the University on the basis of course work undertaken at Simon Fraser University. It must be stressed that non-Canadian students should not predicate their tuition and living expense estimates upon these sources. Non-Canadian students are normally not permitted to work in Canada. Such students are expected and required by federal law to have sufficient funds guaranteed for their education prior to arrival in Canada.
BC Part-time Student Assistance Program
This provincially sponsored program gives financial assistance to part-time undergraduate students enrolled at eligible public post-secondary institutions. This program will help needy part-time students with educational costs such as tuition, books, supplies and related expenses. Who may apply? Any person who is:

- a mature student or single parent
- a BC resident (resided in BC for the past 12 months excluding time spent in full-time post secondary studies)
- enrolled at an eligible public institution in less than 60% of a full course load with a course duration of at least 12 weeks
- not receiving financial assistance for study expenses from other sources
- a Canadian citizen or landed immigrant
- not in BC Student Loan default or over award
- undertaking a first degree, diploma or certificate program
- unable to study full-time

Applications are available at Financial Assistance.

Work-Study program
The Work-Study program provides part-time on-campus jobs for full-time students during the Fall and Spring semesters. To become eligible, students must apply for BCSAP funding. If their financial need is greater than the maximum BCSAP funding, they may be notified by Financial Assistance that they are eligible for Work-Study placement. Each Work-Study placement lasts one semester and pays approximately $8 an hour, covering a range of 110 to 155 hours.

Faculty of Applied Sciences
Location: 9861 Applied Sciences Building
Telephone: 778.782.4724
Dean: R.G. Marteniuk BPE, MA (Alta), EdD (Calif)

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, as well as human and social aspects of the application of science. The Faculty of Applied Sciences offers programs in

- Communication
- Computing Science
- Engineering Science
- Kinesiology

Undergraduate Degrees Offered
- Bachelor of Applied Science
- Bachelor of Arts (Honors)
- Bachelor of Arts
- Bachelor of Science (Honors)
- Bachelor of Science
- Bachelor of Science (Kinesiology) (Honors)
- Bachelor of Science (Kinesiology)

Diplomas and Certificates Offered
- Certificate in Health and Fitness Studies
- Post Baccalaureate Diploma
- Post Baccalaureate Diploma in Computing Science
- Post Baccalaureate Diploma in Kinesiology
Faculty of Arts
Location: 6168 Academic Quadrangle
Telephone: 778.782.4414, 778.782.3022 Fax
Dean: E.W. Alderson BA (Haverford), MA, PhD (Calif)
Associate Dean: W.R. Krane BA (S Fraser), MA, PhD (York)
Associate Dean: A. Lebowitz BA (New Rochelle), MA (Wis)
Advisor: Ms. M. Caufield, BA (S Fraser), 778.782.5921

Undergraduate Degrees Offered
Bachelor of Arts (Honors)
Bachelor of Arts (Joint Honors)
Bachelor of Arts
Bachelor of Fine Arts
Bachelor of General Studies

Diplomas and Certificates Offered
Certificate in Chinese Studies
Certificate in Criminology (General)
Certificate in Criminology (Advanced)
Certificate in Teaching ESL Linguistics
Certificate in Family Studies
Certificate in French Canadian Studies
Certificate in French Language Proficiency
Certificate in Liberal Arts
Certificate in Native Studies Research
Certificate in Public History
Certificate for Senior Citizens
Certificate in Spanish Language Proficiency
Certificate in Urban Studies
Certificate in Women's Studies
Post Baccalaureate Diploma
Post Baccalaureate Diploma in Community Economic Development
Post Baccalaureate Diploma in Criminology
Post Baccalaureate Diploma in Ethnic and Intercultural Relations
Post Baccalaureate Diploma in Teaching English as a Second Language
Post Baccalaureate Diploma in Gerontology
Post Baccalaureate Diploma in Humanities
Post Baccalaureate Diploma in Public History
Post Baccalaureate Diploma in Social Policy Issues
Post Baccalaureate Diploma in Urban Studies

Programs Offered
The Faculty of Arts offers programs in the following.

Archaeology
Cognitive Science

Student Responsibility
It is the responsibility of each student in the Faculty of Arts to be aware of the Faculty regulations as stated in this Calendar. Departmental and faculty advisors and staff are available to give 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 of the Faculty of Arts departments provides an advisory service for assisting students to choose courses to satisfy degree requirements. Students who have made a formal program declaration should avail themselves of these services. Those who have not will be advised by a representative of the Faculty in the Academic Resource Office. Where specified, students should also consult the Office of the Dean of Arts regarding Arts regulations.

Students in all programs leading to Bachelors degrees in the Faculty of Arts must consult an advisor at the following times in their academic programs.

- prior to first registration at the University, and
- during that semester when they are taking their 45th credit hour, and
- during that semester when they are taking their 90th credit hour

Students in other programs, such as certificate and post baccalaureate diploma programs, are governed by the requirements of the specific programs.

**Important Note**
Students may count any Simon Fraser University course for which credit is received toward the Bachelor of Arts degree with the exceptions of EDUC 401, 402, 405 and 406; ATHL, 201, 202, 203 and 204.

Only the first five duplications taken in a student's program will count toward a BA degree. A maximum of five duplications will count toward all programs taken in the Faculty of Arts at Simon Fraser University.

There are specific restrictions regarding counting GS 498 and 499.

The maximum number of credit hours offered through the Tri-Education Summer Institute that can count toward a degree or Post Baccalaureate program in the Faculty of Arts is nine.

**Load Levels**
Students who have not yet completed 60 semester hours require written consent of the Dean to register in more than 16 hours in one semester. Students who have completed 60 semester hours require the written consent of the Dean to register in more than 18 semester hours in one semester.

**Co-operative Education Program in Liberal Arts**
Location: 2100 East Academic Annex
Telephone: 778.782.3809/3041/5839
Co-ordinators: Ms. J. Horne, Ms. P.G. Johnston

The Co-operative Education Program is available for students who wish to acquire practical experience in conjunction with their studies in departments or programs in the Faculty of Arts. The student normally spends alternate semesters on campus and in paid, study-related jobs.

This program is open to all students. Refer also to Archaeology, Economics, Geography, History, Psychology, English and Sociology and Anthropology as well as the Co-operative Education sections of this Calendar.

**Requirements**
To be admitted, students must have completed a minimum of 30 semester hours with a minimum CGPA of 3.00. 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 course in your area of interest is strongly recommended. Computer literacy is a requirement. See the Faculty of Arts Co-op Co-ordinators for further information.

Major Program
The following are recommended prior to entry in the Co-op Education program: one course from either set 2 or set 8 as listed under the Liberal Arts Certificate, and at least 12 hours of required lower division courses in the major program.

Undeclared Majors or Students Without Majors (BGS/BEd)
The following requirements are from the Liberal Arts Certificate.

- a course from set 2
- a course from set 4 or 5
- a course from set 6 or 7
- a course from set 8 or 9
- a course from set 10 or 11
- a course from set 12

Note: Enrollment in the Liberal Arts Certificate Program is not required for participation in the Liberal Arts Co-op Program. However, students are encouraged to complete the certificate in conjunction with the Co-op Program.

Transfer Students
Transfer students are ordinarily required to spend one semester at Simon Fraser University before applying to the Co-op Program. College transfer students who have participated in co-op programs elsewhere may be credited with the semesters already taken. Those students contemplating transfer to the Faculty of Arts Co-op Program at Simon Fraser University should make early contact with an Admissions Advisor in the Office of the Registrar.

In order to obtain Co-op accreditation on the Bachelor of Arts degree, the following courses must be completed.

- LBRL 101-0 Practicum I
- LBRL 201-0 Practicum II
- LBRL 301-0 Practicum III
- LBRL 401-0 Practicum IV
- LBRL 402-0 Practicum V

Bachelor of Arts Degree
Students can meet the requirements for a Bachelor of Arts degree in any one of four ways: either through a major program; or through two extended minors; or through an honors program; or through a joint honors program. The requirements for earning a Bachelor of Arts degree in any of these ways are set out below.

In addition to degree requirements, students may also fulfill the requirements for an extended minor or a minor, as noted under the Options headings.

Major Program
Students wishing to concentrate in a subject area may take a major, consisting of at least 30 upper division semester hours in that subject area. This program, which is the most common option chosen by students pursuing a Bachelor of Arts provides students with a strong background in a subject and is preparation for a range of occupations or for further study following graduation.

At least 120 semester hours are required which include the following.

- at least 65 semester hours in Arts subjects
- at least 45 semester hours in upper division courses, including at least 30 upper division semester hours in an Arts major program. No more than 15 upper division credit hours transferred from another institution may be used toward the requirements for a major.
• lower division requirements for at least one Arts major
• satisfaction of the Faculty of Arts breadth requirements (see below)

Note: A department may designate up to eight semester hours of program related upper division courses offered by other departments, as being acceptable in fulfilling part of the required hours in a major program.

Extended Minor Program
Students wishing to prepare themselves in two subject areas and not desiring to undertake a major program may take an extended minor program consisting of the completion of two extended minors in the Bachelor of Arts degree. An extended minor consists of the lower division major requirements and the upper division minor requirements in a subject area. This program, oriented toward both depth and breadth, is particularly suitable for students preparing to teach in the BC school system.

At least 120 semester hours are required which include the following.

• at least 65 semester hours in Arts subjects
• at least 45 upper division semester hours, including 30 in two extended minor programs (at least 15 upper division semester hours in each of two extended minor programs). No more than 8 upper division hours transferred from another institution may count toward an extended minor, and no more than 15 upper division transfer credits in total may be used toward this Bachelor of Arts degree.
• lower division requirements for at least two extended minor programs. The lower division requirements for an extended minor program are the same as lower division requirements for a major program.
• satisfaction of the Faculty of Arts breadth requirements (see below).

Honors Program
At least 132 semester hours of credit which include the following.

• at least 65 semester hours in Arts subjects
• at least 60 semester hours in upper division courses which must include at least 50 semester hours in upper division courses in an Arts honors program. No more than 15 upper division semester hours of credit transferred from another institution can be used toward this requirement.
• lower division prerequisites for at least one Arts honors program
• satisfaction of the Faculty of Arts breadth requirements (see below)

Note: A department may designate up to 12 semester hours of program related upper division courses offered by other departments, as being acceptable in fulfilling part of the required upper division credit hours in the honors program.

Joint Honors Program
At least 132 semester hours of credit which include the following.

• at least 65 semester hours of credit in Arts subjects
• at least 60 semester hours in upper division courses which must include at least 28 semester hours in upper division courses in each of the two honors subjects. No more than 15 upper division semester hours of credit transferred from another institution can be used toward this requirement.
• lower division prerequisites for both honors programs
• satisfaction of the Faculty of Arts breadth requirements (see below)
• satisfactory completion of an honors essay jointly supervised by and acceptable to both honors departments

Students are required to maintain a GPA of 3.0 in the upper division courses in each of the subjects of the joint honors program.

Extended Minor Option
An extended minor consists of the lower division requirements for a major program, plus the upper division requirements for a minor program. At least seven upper division hours counted towards this requirement must be taken from Simon Fraser University.
Note: There are programs in the School for the Contemporary Arts which have individually defined extended minors but which do not have majors.

Minor Option
All minor programs offered by the Faculty of Arts require at least 15 upper division semester hours taken within a single discipline unless otherwise specified in the Calendar. At least seven upper division semester hours counted towards this requirement must be taken from Simon Fraser University.

Breadth Requirements
In addition to completing the courses within a department or program required for any degree program in the Faculty of Arts, students must complete breadth requirements designed to acquaint them with areas of knowledge and modes of thought outside their discipline of specialization. These faculty breadth requirements may be met in a variety of ways. In completing them, students are encouraged to earn a Certificate in Liberal Arts, a program specifically tailored for breadth of learning. The requirements are as follows.

- a minimum of 30 semester hours outside the Arts honors, major or extended minor department. (For the purpose of this requirement, read "school" as department.)
- no fewer than five departments (other than the Arts honors, major or extended minor department) from the list below.
- no more than nine semester hours from any one department may be counted toward the total of 30 required semester hours.
- up to six semester hours of the 30 semester hours may be from GS courses. For the purpose of this last requirement the following academic units will count as separate "departments".

Archaeology (ARCH)
Biological Sciences (BISC)
Business Administration (BUS)
Canadian Studies (CNS)
Contemporary Arts (FPA)
Chemistry (CHEM)
Communication (CMNS)
Community Economic Development (CED)
Computing Science (CMPT)
Criminology (CRIM)
Economics (ECON and BUEC)
Education (EDUC, except EDUC 401, 402, 405, and 406)
Engineering Science (ENSC)
English (ENGL)
First Nations (FNST)
French (FREN)
Geography (GEOG)
Gerontology (GERO)
History (HIST)
Humanities (HUM)
Kinesiology (KIN)
Languages: Chinese (CHIN), German (GERM), Italian (ITAL), Japanese (JAPN), and Russian (RUSS)
Linguistics (LING)
Mathematics and Statistics (MATH and STAT)
Philosophy (PHIL)
Physics (PHYS)
Political Science (POL)
Psychology (PSYC)
Sociology and Anthropology (SA)
Spanish and Latin American Studies (includes SPAN and LAS)
Women's Studies (WS)

Course enrollment in some of these may be limited to those with approved programs in these subjects. Courses that are not clearly within the above "departments", or courses transferred from other institutions in subjects without direct equivalence at
Simon Fraser University may count toward these requirements on an individual basis and upon application to the Dean of Arts Office (AQ 6168).

Whether or not students complete the certificate program, they may take the faculty breadth requirements as an opportunity for exploratory study in advance of choosing a major discipline. Some departments will advise students as to subject areas and specific courses they recommend to prepare for a major program. A substantial proportion of these requirements may be applied to a number of cross-disciplinary major, extended minor or minor programs within the faculty. In planning the most effective way to fulfill the breadth requirements, students should seek advice in the Academic Resource Office and in any departments in which they may be planning to major.

University College of the Fraser Valley Program
University College of the Fraser Valley in Abbotsford, BC offers a program leading to a Bachelor of Arts degree. This degree is offered in association with the Faculty of Arts and is issued by Simon Fraser University.

Program Declaration
Prior to or upon registering for the semester in which the 61st credit is taken, students must formally declare and be accepted into a major program or two extended minor programs, and may, subject to the regulations below, apply for an honors program. The formal 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.

Students wishing to change their degree programs may do so at any time prior to graduation. A new formal declaration to this effect must be approved by the department of the new major and by the Dean of Arts office if a change of faculty is involved. At that time, the Calendar then in effect becomes the new Graduating Calendar, and the requirements which it specifies for the major or extended minor program must be fulfilled.

Honors Program
Acceptance to this program is contingent upon satisfying the entrance requirements of the department concerned. Applicants normally will have received a GPA of 3.0 in subject(s) of the honors field. When admission has been granted, the student then registers as an honors student. To continue in the program, 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 the Calendar which was in effect at the time of the original acceptance into the program.

Requirements for Graduation
The graduation GPA is different from the cumulative GPA. Please refer to the graduation requirements which appear in the General Information section for both the general and honors program.

General Program
In addition to the general requirements, please note that the Faculty of Arts has the following requirements for the general program.

The minimum requirement for graduation is a graduation GPA of 2.0 and a GPA of 2.0 in all upper and lower division courses taken in the major, extended minor or minor department(s) with the exception that duplicate courses are counted only once. It should be noted that the university regulations governing the duplication of courses are vigorously applied in the Faculty of Arts. Students who do not obtain the minimum GPA in their programs within the limits of five duplications will not be able to complete a major, extended minor or minor degree within the Faculty of Arts.

Faculty of Business Administration
Location: 3302 Lohn Building
Telephone: 778.782.3708, 778.782.4920 Fax
Dean: S.J. Shapiro AB (Harv), MBA, PhD (Penn)
Associate Dean: C.F. Smart BCom, MBA, PhD (Br Col)
Professors Emeriti
P.L. Cheng B.S. (Natnl Chiao Tung), MA (Missouri), PhD (Wis)
G.C. Hoyt AB (Stan), MA (Chic), PhD (Calif)
R. Rogow BS (Rutgers), MA (Wis), PhD (NY), Director of Undergraduate Program

Ming and Stella Wong Endowed Chair in International Business
R.L. Tung BA (York), MBA, PhD (Br Col)

Professors
E.U. Choo BSc (Nan), MSc, PhD (Br Col)
R.R. Grauer BCom, MBA (Br Col), PhD (Calif)*
J.P. Herzog BS, PhD (Calif)*
R.A. Holmes BA, MA (Sask), PhD (Indiana)*
C.E. Love BEng, MBA (McM), PhD (Lond)
G.A. Mauser BA, PhD (Calif)
L.N. Meredith BA, MA, PhD (S Fraser)
L.T. Pinfield BSc (Leeds), MS (Carnegie Tech), PhD (Stan)
B. Schoner BEng (McG), MBA (W Ont), PhD (Stan)
D.M. Shapiro BA (Calg), MA, PhD (C'nell)
S.J. Shapiro AB (Harv), MBA, PhD (Penn), Dean of Faculty
D.W. Tjosvold AB (Prin), MA, PhD (Minn)
R.L. Tung BA (York), MBA, PhD (Br Col)
A.R. Vining LLB (London), MBA, MPP, PhD (Calif)
W.C. Wedley BCom (Br Col), MBA, PhD (Col)
M.N. Wexler BA (McG), MA (W Ont), PhD (York, Can)
R.G. Wyckham BA, MBA (W Ont), PhD (Mich State)

Associate Professors
M.F. Abdel Magid BCom (Alexandria), MSc, PhD (Ill)
A. Bick BSc, MSc (Tel Aviv), MBA (Hebrew Univ of Jerusalem), PhD (Calif)
G.W. Blazenko BA (S Fraser), MA (W Ont), PhD (Br Col)
G.R. Bushe BA (C'dia), PhD (Case W Reserve)
P.M. Clarkson BSc (Trent), BA (W Ont), BCom, MBA (Windsor), PhD (Br Col)
L.D. Etherington BEd (Alta), MB, PhD (Wash)
D.R. Finley BS (Harding), MA, PhD (American)
I.M. Gordon BA, MA, PhD (S Fraser)
S.J. Havlovic BA, MLHR, PhD (Ohio State)
J.W. Heaney BA, MSc (Sask), MA, PhD (S Fraser), PhD (Alta)
C.V. Jones BSc, MEng, MSc, PhD (C'nell)
S.L. McShane BA (Qu), MIR (Tor), PhD (Mich State)
D.C. Parker BCom, MBA (Calg), PhD (W Ont)
G. Poitras BA (Dal), MA (McM), MPhil, PhD (Columbia)
J.G. Richards BA (Sask), BA (Camb), MA, PhD (Wash, Mo)
R.W. Schwindt AB, PhD (Calif)*
C.F. Smart BCom, MBA, PhD (Br Col), Associate Dean of Faculty
A.R. Warburton BA (Br Col), MSc (Montr), PhD (Br Col)
J.L. Zaichkowsky BHEc (Br Col), MSc (Guelph), PhD (Calif)

Assistant Professors
N.A. Abramson BA (Sask), MA, MBA, PhD (W Ont)
E.W. Bukszcz Jr. BA (John Carroll Univ), MBA (Arizona), PhD (Ariz)
C.M. Collins-Dodd BComm, PhD (Alta)
R.A. Davidson BComm (Manit), MBA (York), PhD (Arizona)
C.P. Egri BComm, MSc (Br Col)
C.E.N. Emby BComm (Manit), MBA (Br Col), PhD (Alta), CA
J.N.P. Francis BSc (West Indies), MBA (York), PhD (Wash)
A.M.G. Gelardi Cert in Educ (Keele), MSc (Miami), PhD (Arizona)
Z. Rebmann-Huber BASc, MASC (Br Col), MSc (Lond), PhD (Wash)
B.H. Reich BA, MSc, PhD (Br Col)
J.P. Sheppard BS (Penn), MBA (Indiana), PhD (Wash)
M.N. Stark BA, LLB (Br Col), QC
K.E. Vandezande BS (N Colorado), PhD (New York)

Adjunct Professors
L.L. Ball BS (US Air Force), MS (S Calif), MS (Calif), PhD (Stan)
J.B. Stephenson BA (Claremont-McKenna), BSc, PhD (Stan)

Instructors
S.B. Blumenfeld BS (Carroll), MA (Wis), AM (Ill)
H. Merchant BCom (Bombay), MBA (Clarion)

Senior Lecturer
J.C. Hsieh BA, MBA (Oregon), CA

Lecturers
M.R. Fizzell BEd, BComm, MSc (Sask), CMA
B.J. MacKay BA, MA (Wat), CA

*joint appointment with Economics

Undergraduate Degrees Offered
Bachelor of Business Administration (Honors)
Bachelor of Business Administration

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 Information Systems in Business Administration and Computing
Science Joint Major in Business and Latin American Studies
Joint Major in Business Administration and Political Science
Joint Major in Business Administration and Psychology
BBA - Honors Program
Honors in Business Administration
Joint Honors in Business Administration and Economics

Undergraduate Programs

Advisors
C. Hamblin BA (S Fraser)
Undergraduate Program Co-ordinator
2389 Lohn Building, 778.782.4624, 778.782.5571 Fax

M. Czornobay
Undergraduate Program Advisor
2391 Lohn Building, 778.782.3747, 778.782.5571 Fax

Introduction
The Faculty offers honors, major and minor programs. In co-operation with the Faculties of Applied Sciences and Arts, 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 be taking mainly non-Business courses during their first 60 hours. During that period students will complete three categories of courses. The first category consists of lower division requirements. These are mainly tool courses to prepare the student for more advanced upper division Business courses. The second category consists of group requirements which roughly correspond to Humanities, Sciences and Social Sciences. In the third category, students choose their own courses based on intellectual interest or usefulness in achieving academic goals. The first two categories should be completed during the first 60 hours of the degree program.

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.

**Undergraduate courses**
Information on [BUS](#) and [BUEC](#) undergraduate courses.

**Admission Information**

**Criteria**
Students will be selected competitively on the basis of academic performance and potential as reflected by the cumulative grade point average (CGPA) and performance in lower division requirement courses (except BUS 207 and 254 which may be completed after Faculty admission). To be considered for admission to the Faculty, students must have completed these courses with a minimum C- (C minus) grade. The number of undergraduate students granted entry to the Faculty is limited to 400 to 600 new students per academic year.

Students must be admitted to the University before applying for Faculty admission. University admission does not guarantee admission to the Faculty. In addition to normal requirements, students transferring from community colleges or technical institutes should have a minimum admission GPA of 3.00. The Simon Fraser University CGPA takes precedence over all other CGPAs.

**Application Procedures**

Students apply for admission to the Faculty any time after completing the thirtieth semester hour and before the sixtieth hour. Apply during the semester in which the lower division requirements (except BUS 207 and 254) are completed. Students not accepted upon initial application may re-apply. Rejected applicants may appeal through the Faculty Appeals Committee.

**Application Deadlines**

April 1* for Summer semester, August 1* for Fall semester, December 1* for Spring semester

*application earlier in the semester is recommended

Application forms are available in the Undergraduate Program offices in the second month of each semester.

**International Student Applications**

International students are neither Canadian citizens nor Canadian permanent residents. University policy limits the number of international students admitted by the Faculty of Business Administration as majors, minors, or honors students (including joint programs) to ten percent of the total admitted.

This admission decision is not made at the time of the student's University admission but rather when all the lower division requirements (except BUS 207 and 254) have been completed and formal application is made to the Faculty.

Admission of international students to the Faculty is based on a comparison of international student applicants' academic performance and potential. It is highly competitive. That is, it is anticipated that international students will require a CGPA appreciably higher than that required of non-international students. In all cases, a CGPA at least equal to that required of non-international students will be required.
Non-Majors Access to Business Courses
Priority in upper division Business courses is given to students who are approved in a Business program. (A Business program is defined as major, minor, honors and joint programs.) Students are permitted to undertake the lower division Business courses without formal admission to the Faculty.

Students other than those accepted into a program in Business Administration may take upper division Business Administration courses with the permission of the Faculty. That permission will be contingent upon

- space available after the first week of classes
- meeting of the same entrance CGPA and specific course requirements that major, honors and minor students meet
- meeting the prerequisites for the individual course requested

Candidates for a first Bachelors degree in other Simon Fraser University faculties may have specific course requirements modified by the Faculty, upon request.

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 for continuance in all programs a minimum CGPA of 2.25 and a minimum CGPA of 2.00 in all Business Administration courses.

In order for a course to be accepted as fulfilling a prerequisite, 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 semester hours of credit may enroll in a maximum of 16 credit hours per semester. Those with 60 credit hours or more may enroll in a maximum of 18 credit hours.

Major Program
Students must complete at least 120 semester hours which must include a minimum of 50 semester hours outside the Faculty of Business Administration. Courses taken outside Business Administration as part of group requirements (see Group Requirements below) may be counted as part of these 50 hours.

Lower Division Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>BUEC 232-3</td>
<td>Elementary Economic and Business Statistics I</td>
</tr>
<tr>
<td>BUS 207-3</td>
<td>Managerial Economics* (ECON 301-5)</td>
</tr>
<tr>
<td>BUS 237-3</td>
<td>Introduction to Computers and Information Systems in Business</td>
</tr>
<tr>
<td>BUS 251-3</td>
<td>Financial Accounting I</td>
</tr>
<tr>
<td>BUS 254-3</td>
<td>Managerial Accounting I*</td>
</tr>
<tr>
<td>BUS 272-3</td>
<td>Behavior in Organizations</td>
</tr>
<tr>
<td>ECON 103-3</td>
<td>Principles of Microeconomics</td>
</tr>
<tr>
<td>ECON 105-3</td>
<td>Principles of Macroeconomics</td>
</tr>
<tr>
<td>MATH 157-3</td>
<td>Calculus for the Social Sciences I (or MATH 151 or 154)</td>
</tr>
</tbody>
</table>

*courses listed above with an asterisk may be completed following admission to the Faculty.

Non BUS or BUEC courses taken as part of the lower division requirements may count toward the 50 semester hours outside Business Administration.

Note: BUEC 333-3 Elementary Economic and Business Statistics II; students planning to major in Business Administration are advised to take BUEC 333 in the first 60 semester hours (see regulations below governing upper division courses taken in lower level hours).
**Group Requirements**
To satisfy the three group requirements (groups A, B and C), students must complete the following courses.

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
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</thead>
<tbody>
<tr>
<td>Students must complete four courses</td>
<td>Students must complete four courses</td>
<td>Students must complete two courses</td>
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<tr>
<td>from at least two departments from the</td>
<td>from at least two departments from the</td>
<td>from the following.</td>
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<td>following.</td>
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<td>Biochemistry</td>
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<tr>
<td>Contemporary Arts</td>
<td>Archaeology</td>
<td>Biological Sciences</td>
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<td>English</td>
<td>Canadian Studies</td>
<td>Chemistry</td>
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<tr>
<td>General Studies</td>
<td>Communication</td>
<td>Computing Science</td>
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<tr>
<td>History</td>
<td>Criminology</td>
<td>Kinesiology</td>
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<tr>
<td>Humanities</td>
<td>Economics</td>
<td>Mathematics</td>
</tr>
<tr>
<td>Languages</td>
<td>Education</td>
<td>Physical Geography: GEOG 111, 112, 213, 214,</td>
</tr>
<tr>
<td>Linguistics</td>
<td>Geography (excluding all Physical Geography)</td>
<td>215, 311, 313, 314, 315, 317, 412, 413, 414,</td>
</tr>
<tr>
<td>Philosophy</td>
<td>Geography courses</td>
<td>415, 416, 417, 418</td>
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<td></td>
<td>Gerontology</td>
<td>Physics</td>
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<td></td>
<td>Latin American Studies</td>
<td>Statistics</td>
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<td>Political Science</td>
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<td>Psychology</td>
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<td></td>
<td>Sociology and Anthropology</td>
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<tr>
<td></td>
<td>Women’s Studies</td>
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</tbody>
</table>

**Note:** courses selected to meet the group requirements may be upper or lower division and need not be completed prior to application to the Faculty.

**Upper Division Requirements**
Students must complete at least 36 semester hours of upper division credit in Business Administration including 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 count 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 semester hours minimum.

In the last 60 hours of upper level course work, students must take a minimum of 45 semester hours in upper division courses, of which a minimum of 36 hours must be in Business Administration or BUEC courses. BUEC courses may count only once, as Business Administration or Economics credits.

Students may not register in upper division (300 and 400 level) Business Administration courses before completing the first 60 lower division credit hours, with two exceptions:

- approved Business majors and minors may take upper division BUS and BUEC courses after the completion of 45 credit hours
- all students may take BUEC 333 before completion of 60 credit hours Students should note that any 300 or 400 division course taken before the completion of 60 credit hours will not count as fulfilling the 45 hours of upper division credits required in the final 60 hours of the program, or as part of the upper division hours for the major or minor.

**Note:** ECON courses listed as part of a concentration will fulfill a requirement but will not count as part of the required upper division hours in Business Administration.
Core Courses
Students majoring in Business Administration are required to complete all of
BUEC 333-3 Elementary Economic and Business Statistics II
BUS 312-4 Business Finance
BUS 336-4 Management Science
BUS 343-3 Introduction to Marketing
BUS 360-3 Business Communication
BUS 478-3 Seminar in Administrative Policy and one of
BUS 374-3 Organization Theory
BUS 381-3 Introduction to Human Resource Management
BUS 388-3 Teamwork in Organizations and one of
BUEC 391-3 Law in the Economic Society
BUS 303-3 Business in Society
BUS 304-3 Introduction to Business Ethics
BUS 346-3 International Business
BUS 439-3 North American International Trade Issues
BUS 403-3 Seminar in Business and Society
BUS 449-3 Marketing and Society

Students must complete the 300 division core courses before their 90th credit hour unless prior permission of the Faculty is obtained.

Areas of Concentration
Students must complete a concentration within one or more of the following areas by completing the courses specified below.

Accounting
BUS 251-3 Financial Accounting I
BUS 254-3 Managerial Accounting I
BUS 319-3 Integrative Financial and Managerial Accounting
BUS 320-3 Financial Accounting: Assets
BUS 321-3 Financial Accounting: Equities
BUS 421-3 Accounting Theory
BUS 424-3 Managerial Accounting II

Finance
BUS 312-4 Business Finance
BUS 315-4 Investments
BUS 413-4 Financial Management
BUS 416-3 Investment Analysis and Design

and two of
BUS 410-3 Financial Institutions
BUS 418-3 International Financial Management
ECON 345-3 International Finance

Human Resource Management
two of
BUS 374-3 Organization Theory
BUS 381-3 Introduction to Human Resource Management
BUS 388-3 Teamwork in Organizations

and two of
BUEC 384-3 Industrial Relations
BUEC 385-3 Collective Bargaining
BUS 481-3 Human Resource Planning and Staffing
BUS 482-3 Reward Systems and Employee Development
BUS 483-3 Organizations and Careers
BUS 484-3 Workplace Industrial Relations
BUS 487-3 Organizational Development and Change
BUS 488-3 Human Relations in Business

**International Business**
BUS 346-3 International Business

*and one Cross-cultural course*
BUS 430-3 Comparative Management
BUS 432-3 International Human Resource Management

*and two Functional courses [one of which must be from a]*
a) BUS 434-3 Foreign Market Entry
BUS 435-3 Management of International Firms
b) BUS 427-3 Seminar in International Accounting
BUS 438-3 Multinational Corporate Finance (or BUS 418)
BUS 447-3 International Marketing Management

*and one Geographic Area course*
BUS 431-3 Business with East Asian Countries
BUS 439-3 North American International Trade Issues
BUS 492-3 Selected Topics in Business Administration*
BUS 493-3 Selected Topics in Business Administration*
BUS 494-3 Selected Topics in Business Administration*

* when topic is South East Asia or other areas

Other upper division courses deemed to have significant international business relevance may, with prior permission of the Faculty, be substituted for any of the above courses. Such courses may be offered in another Faculty.

It is strongly recommended that one Cross-cultural course be taken before any Functional or Geographic Area courses, or taken concurrently with the first of these.

**Note:** students concentrating in international business are strongly advised to consider combining it with another business concentration.

**Management Information Systems**
BUS 362-4 Information Analysis and Systems Design
BUS 364-3 Information Systems in Organizations and Society
BUS 468-3 Management Issues in Information Systems
CMPT 101-4 Modula 2 (or CMPT104-2)

*and one of*
BUS 462-4 Management Support Systems
BUS 466-3 Managing Data Communications

**Management Science Concentration**
BUS 336-4 Management Science
MATH 158-3 Calculus for Social Sciences II

*and three of*
BUEC 433-5 Forecasting in Business and Economics
BUS 445-3 Analysis of Data for Management  
BUS 437-3 Decision Analysis in Business  
BUS 473-5 Operations Management  
ECON 331-5 Introduction to Mathematical Economics

**Marketing**  
BUS 343-3 Introduction to Marketing  
BUS 347-3 Buyer Behavior  
BUS 442-3 Introduction to Marketing Research

*and two of*  
BUS 344-3 Industrial Marketing  
BUS 445-3 Analysis of Data for Management  
BUS 446-4 Marketing Strategy  
BUS 447-3 International Marketing Management  
BUS 448-4 Promotion Management  
BUS 449-3 Marketing and Society

At least one of these must be selected from 344, 446, or 447.

**Policy Analysis**  
*one of*  
BUEC 396-3 The Structure of Industry  
BUEC 397-5 Government and Business  
BUEC 495-3 Legal Aspects of Economic Relationships  
BUS 304-3 Introduction to Business Ethics  
BUS 346-3 International Business  
BUS 398-3 Commercial Legal Transactions  
BUS 403-3 Seminar in Business and Society  
BUS 476-3 Commercial Legal Relations

*and either Business Strategy courses*  
BUS 450-3 Theoretical Issues in Strategic Management  
BUS 452-3 Seminar in Advanced Strategic Analysis

*or Public Policy courses*  
BUEC 391-3 Law in the Economic Society  
BUS 498-3 Directed Studies* (or 499*)  
*in a topic approved by the area co-ordinator and the Faculty.

**Honors Program**  
After the completion of 15 upper division semester hours in Business Administration, students can apply to enter the honors program. Both the CGPA and GPA for upper division BUS and BUEC courses must be at least 3.00 (or 3.50 for honors first class) for entry into and continuance in the honors program.

Honors students must meet all the requirements of the major program. The honors program requires 12 credit hours of 400 division courses beyond the 120 hours required for the major degree. These hours must be in 400 division BUS or BUEC courses within an area of concentration or in other 400 division courses in the Faculty of Business Administration or other faculties that are approved by the area co-ordinator. These 12 credit hours are in addition to those required for the area of concentration and core course requirements for the major program. Approvals in advance by the area co-ordinator and the Faculty are required for these 12 credit hours.

In the student's upper levels (normally the last 72 hours of the honors program), the student must take a minimum of 57 upper division credit hours, of which 42 must be in BUS or BUEC courses.
Minor Program

Lower Division Requirements
BUEC 232-3 Elementary Economic and Business Statistics I
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 103-3 Principles of Microeconomics
ECON 105-3 Principles of Macroeconomics
MATH 157-3 Calculus for the Social Sciences I

*may be completed after admission to the Faculty

Upper Division Requirements
Students should note that, if permission is granted to take any 300 or 400 level course before the completion of 60 credit hours, then those courses will not count toward fulfilling the 16 upper division hours for the minor.

At least 16 semester hours of upper division BUS or BUEC credit 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
BUS 388-3 Teamwork in Organizations

Joint Programs

Common Requirements of All Joint Programs
All joint major and honors programs require that the student 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 joint major or joint honors in the co-operating department or school.

The lower division requirements and core courses of the Faculty of Business Administration must be completed, except as specifically modified below. See Core Courses under Major Program. For joint programs, BUS 360 is recommended but not required.

Students in joint programs may opt for a degree from either Faculty involved. Faculty requirements will be governed by the Faculty from which the student chooses to take a degree.

Joint Major in Business Administration and Communication
Students are required to complete at least 32 hours of upper division credit in Business Administration or BUEC courses including the core courses, and the courses specified below in either the marketing or policy analysis area of concentration.

Marketing

Required Courses
BUS 343-3 Introduction to Marketing
BUS 347-3 Buyer Behavior
BUS 442-3 Introduction to Marketing Research

and at least one of the following 400 division marketing courses
BUS 445-3 Analysis of Data for Management
BUS 446-4 Marketing Strategy
BUS 448-4 Promotion Management
BUS 449-3 Marketing and Society

Policy Analysis

Required Courses

either
BUS 450-3 Theoretical Issues in Strategic Management
BUS 452-3 Seminar in Strategic Analysis

or
BUEC 391-3 Law in the Economic Society
BUS 498-3 Directed Studies (or 499-5*)

*in a topic approved by the area co-ordinator and the Faculty

Communication Lower Division Requirements
CMNS 110-3 Introduction to Communication Theory
CMNS 130-3 Explorations in Mass Communication

and four additional lower division courses for a total of 18 hours in Communication including

one of
CMNS 260-3 Introduction to Empirical Communication Research Methods
CMNS 261-3 Documentary Research in Communication

Communication Upper Division Requirements

Required

one of
CMNS 362-4 Evaluation Methods for Applied Communication Research
CMNS 363-4 Approaches to Media and Audience Research

and the course sequence in Communication complementary to the area of concentration chosen in Business Administration.

Marketing

either
CMNS 221-3 Media and Audiences
CMNS 421-4 Issues Seminar

or
CMNS 223-3 Advertising as Social Communication
CMNS 323-4 Cultural Dimensions in Advertising

Policy Analysis

Students are required to complete one of the following Policy courses.
CMNS 333-4 Broadcasting Regulation and Policy in Canada
CMNS 334-4 Cultural Policy
CMNS 335-4 The Newspaper Industry and Press Policy in Canada

and
CMNS 433-4 Issues in Communication Policy (or 436)
CMNS 342-4 Science and Public Policy I: Risk Communication
CMNS 442-4 Science and Public Policy II: Standards

Directed Studies (Readings) and Field Placement credit will not count as part of the 24 upper division hours required by Communication for the joint major. The completion of a course in basic science or social science methods, as required for the Communication major, will be deemed fulfilled by the requirements for a major in Business Administration.

**Joint Major in Information Systems in Business Administration and Computing Science**
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**
BUEC 232-3 Elementary Economic and Business Statistics I (or STAT 270)
BUS 251-3 Financial Accounting I
BUS 254-3 Managerial Accounting I
BUS 272-3 Behavior in Organizations
CMPT 101-4 Modula 2 (or CMPT 104)
CMPT 105-3 Fundamental Concepts of Computing
CMPT 201-4 Data and Program Organization
CMPT 275-4 Software Engineering
ECON 103-3 Principles of Microeconomics
ECON 105-3 Principles of Macroeconomics
MACM 101-3 Discrete Mathematics I
MACM 201-3 Discrete Mathematics II
MATH 151-3 Calculus I (or 157)
MATH 152-3 Calculus II (or 158)
MATH 232-3 Elementary Linear Algebra
PHIL 001-3 Critical Thinking
PHIL 214-3 Axiomatic Logic

*and one 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 199-3 University Writing

**Upper Division Requirements**
*all of*
BUS 312-4 Business Finance
BUS 336-4 Management Science (or BUEC 333)
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
CMPT 381-3 Introduction to Human Resource Management
CMPT 388-3 Teamwork in Organizations

and one of
BUS 466-3 Managing Data Communications
CMPT 371-3 Data Communications and Networking

plus
nine credits of additional upper division CMPT courses, excluding CMPT 301. At least one of the courses must be at the 400 level or above.

**Joint Major in Business Administration and Economics**
Students must complete the following.

- at least 29 hours of upper division credit in Business Administration, including the core courses with the following exceptions.
  - the core course requirement that one of BUS 303, 304, 346, 349, 403, 449, or BUEC 391 be completed is waived.
  - BUEC 333, which must be taken, will count as upper division Economics hours rather than as upper division Business Administration hours.
- three courses beyond the core must be completed within the requirements for 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.
- plus at least 25 hours of upper division credit in Economics including
  - ECON 301-5 Intermediate Microeconomic Theory
  - ECON 305-5 Intermediate Macroeconomic Theory
  - and at least two 400 division Economics courses.
- Economics group requirements. Students must complete one of the following courses.
  - ECON 100-3 Introduction to Economics
  - ECON 102-3 Twentieth Century Economics
  - ECON 208-3 History of Economic Thought
  - ECON 250-3 History of Economic Development A
  - ECON 252-3 History of Economic Development B
  - ECON 353-5 Economic History of Canada
  - ECON 395-5 Comparative Economic Systems
  - 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

**Joint Major in Business Administration and Geography**

**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 credit hours of lower division Geography courses including the following.

- GEOG 100-3 Human Geography
- GEOG 111-3 Physical Geography
- GEOG 221-3 Economic Geography
The student must successfully complete a minimum of 24 credit hours of upper division Geography courses including the following.

- 12 credit hours at the 300 division courses
- 12 credit hours at the 400 division courses

**Joint Major in Business Administration and Latin American Studies**

**Business Administration Requirements**
The student must successfully complete the core courses (which must include BUS 346) and two of the following courses.

- BUS 427-3 Seminar in International Accounting
- BUS 430-3 Comparative Management
- BUS 434-3 Foreign Market Entry
- BUS 435-3 Management of International Firms
- BUS 438-3 Multinational Corporate Finance
- 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 of the seven 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 semester hours is required including the following courses.

- LAS 140-3 Cultural Heritage of Latin America
- LAS 200-3 Introduction to Latin American Issues

The remaining six semester hours are to be taken from the approved list of Latin American content courses in the Spanish and Latin American Studies section of the Calendar, from at least two departments.

**Upper Division**
Students are required to complete 20 upper division semester hours of Latin American Studies credit, including at least 12 credit hours in both LAS 300 and 400 division courses as well as a minimum of two upper division Latin American content courses in disciplines outside the joint major.

**Joint Major in Business Administration and Political Science**
Students must complete at least 31 upper division credit hours in Business Administration including core courses, and those courses specified below from the Policy Analysis concentration.

*either*
BUS 450-3 Theoretical Issues in Strategic Management
BUS 452-3 Seminar in Advanced Strategic Analysis
or
BUEC 391-3 Law in the Economic Society
BUS 498-3* Directed Studies (or 499*)

*in a topic approved by the area co-ordinator and the Faculty.

**Political Science Requirements**
The student must complete a minimum of 15 credit hours of lower division credit in at least three fields of Political Science including the following.

POL 100-3 Introduction to Politics and Government
POL 151-3 The Administration of Justice
POL 251-3 Introduction to Canadian Public Administration

Students must complete a minimum of 24 upper division Political Science credit hours from at least three fields, including a minimum of three courses (nine credit hours) from Field E, Public Policy/Administration and Local Government.

**Joint Major in Business Administration and Psychology**

**Business Administration Requirements**

- The student must successfully complete at least one 400 Human Resource Management course.
- Students must successfully complete the Faculty of Business Administration Core courses, with the following exception: 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 333.

**Psychology Requirements**

_all of_
PSYC 100-3 Introduction to Psychology I
PSYC 102-3 Introduction to Psychology II
PSYC 201-3 Research Methods in Psychology
PSYC 210-3 Data Analysis in Psychology
PSYC 260-3 Social Psychology

_18 credit hours_

plus one of
PSYC 221-3 Introduction to Cognitive Psychology
PSYC 241-3 Introduction to Abnormal Behavior
PSYC 250-3 Child Psychology
PSYC 270-3 Introduction to Personality
PSYC 280-3 Biological Bases of Behavior
(18 credit hours)

_and one of_
PSYC 307-3 Historical Foundations of Psychology
PSYC 308-3 History and Systems of Modern Psychology
(3 credit hours)

_and any four of_
PSYC 301-3 Intermediate Research Methods and Data Analysis
PSYC 303-3 Perception
PSYC 304-3 Motivation
PSYC 306-3 Psychological Assessment Procedures
PSYC 325-3 Memory
PSYC 370-3 Theories of Personality
(12 credit hours)
plus 6 additional credit hours of upper division Psychology.

**Joint Honors in Business Administration and Economics**

**Economics Group Requirements**

Students must include at least one of the following courses.

- ECON 100-3 Introduction to Economics
- ECON 102-3 Twentieth Century Economies
- ECON 208-3 History of Economic Thought
- ECON 250-3 History of Economic Development A
- ECON 252-3 History of Economic Development B
- ECON 353-5 Economic History of Canada
- ECON 395-5 Comparative Economic Systems
- 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

**Lower Division Requirements**

The requirements are the same as for the Joint Major in Business Administration and Economics. Refer to that section.

**Upper Division Requirements**

- at least 35 semester hours of upper division credit in Business Administration including the core courses, with the exception of BUEC 333, which is counted as Economics upper division credit hours rather than Business Administration upper division credit hours.
- 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 32 semester hours of upper division credit in Economics or BUEC including
  - BUEC 333-3 Elementary Economics and Business Statistics II
  - ECON 301-5 Intermediate Microeconomic Theory
  - ECON 305-5 Intermediate Macroeconomic Theory
  - ECON 331-5 Introduction to Mathematical Economics
  - ECON 402-3 Advanced Topics in Microeconomics (or 403)
  - ECON 435-5 Quantitative Methods in Economics
  - ECON 499-5 Honors Seminar in Economics

**Exchange Programs**

**Contacts**

C. Hamblin, Undergraduate Program Co-ordinator, 2389 Lohn Building, 778.782.4624
R. Martin, Director, International Education, Office of International Co-operation, 2654 Diamond Building, 778.782.5860

The Faculty participates in undergraduate student exchange agreements with the following institutions.

**Canada**

Saint Mary's University
Universite de Quebec a Montreal
University of Alberta
University of Manitoba
University of Ottawa
University of Saskatchewan

**Germany**

Justus-Liebig-Universitat
Japan
Kansai Gaidai

Korea
Yonsei University

Mexico
Instituto de Estudios Superiores de Tamaulipas
Instituto Tecnologico Autonomo de Mexico (ITAM)
Instituto Tecnologico y de Estudios Superiores de Monterrey (ITESM)
Universidad Autonoma de Guadalajara
Universidad Autonoma de Queretaro
Universidad de Las Americas-Puebla
Universidad Iberoamericana
Universidad La Salle

Netherlands
Hanzehogeschool Groningen

Philippines
De la Salle University

United States
Claremont Graduate School
Eastern Michigan University
Eastern Washington University
University of Colorado at Denver
University of Houston
University of Maine
University of Miami
Vanderbilt University

For more information, please contact the above listed individuals. Students should also consult the Study Abroad section in the General Information portion of this Calendar.

Co-operative Education Program
Location: 2311 Lohn Building, Telephone: 778.782.3619, 778.782.5922 Fax

The Faculty of Business Administration offers a Co-operative Education Program for qualified students. Co-operative education is a process of education which formally integrates a student's academic and career studies on campus with relevant and productive work experience. The program was established in the Faculty in 1980; many employers in business, industry and government agencies 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 "real world" by alternating study semesters with paid work semesters of career-related practical experience.

For those seeking a professional accounting designation (CA, CGA, CMA), special arrangements have been made with respective accounting organizations so that work experience obtained during the program may be recognized toward the required practical experience for their professional designation.

For a list of Co-operative Education co-ordinators, please refer to the Co-operative Education section.

Admission
Admission to the Faculty of Business Administration is a necessary but not sufficient condition for admission to the Co-operative Education program.
For information on admission to programs in Business Administration, see the Admission Information at the beginning of this section.

To enter the Business Co-op Program a student must meet the general credit hours and course requirements, and must have an average in all courses (taken at Simon Fraser University or other institutions) of at least 2.70. Students must maintain these averages to continue in the Business Administration Co-operative Education program.

Normally, only Canadian citizens and permanent residents are eligible to enter Co-operative Education programs.

Admission to the program will normally be based on: a student's academic records; personal interview in the Faculty; and available space in the program.

Withdrawal
Admitted students who fail to secure a placement through job competition in two consecutive semesters is required to withdraw from Co-operative Education. This withdrawal does not necessarily affect continuance in the Faculty of Business Administration. Normally, withdrawal from a work semester constitutes withdrawal from Co-operative Education.

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 five work semesters. All other options require four work semesters.

During study semesters a course load of 15 credit hours per semester constitutes normal progress towards a degree in Business Administration (Co-operative Education). A brochure which outlines program features is available from the Business Administration Co-op Education program co-ordinators.

Centre for North American Business Studies
Telephone: 778.782.5106
Acting Director: B. Condon BA (Br Col), LLB (McG), LLM (Calg)

This centre provides a focal point for the study and analysis of commercial issues of importance to business and government in Canada, the US and Mexico. The general economic integration of North America presents new opportunities and challenges. By establishing an on-going forum for business, government and academic leaders, by providing expert analysis and by disseminating information and research findings, the centre will provide a service contributing to the success of North American business in meeting the competitive challenges of this decade and the 21st century.
Faculty of Education
Location: 8521 Multi Purpose Complex
Telephone: 778.782.3395; 778.782.3203 Fax
Dean: R. Barrow BA (Oxf), CertEd, PhD (Lond)
Associate Dean: M. Manley-Casimir BA (Exe), MEd (Br Col), PhD (Chic)

Professors Emeriti
J.F. Ellis BA, MA (Br Col), EdD (Calif)
M. Gibbons BA (Br Col), MA (Wash), EdD (Harv)
G. Kirchner BPE (Br Col), MS, EdD (Oregon)
J.V. Trivett BS (Lond), DipEd, MA (Brist)
S. Wassermann BS, MS (CCNY), EdD (NY), Professional Programs Director

Professors
R. Barrow BA (Oxf), CertEd. PhD (Lond), Dean of Education
P.E.F. Coleman BA, MA, EdD (Br Col)
S.C. deCastell BA (Sir G Wms), MA, PhD (Lond)
K. Egan BA, Cert Teaching (Lond), PhD (C'nell)
A.C. Kazepides BA (Athens), MEd, EdD (Temple)
M. Manley-Casimir BA (Exe), MEd (Br Col), PhD (Chic), Associate Dean of Education, Director of Graduate Programs
J. Martin BA, MEd, PhD (Alta)
A.A. Obadia BA (Montr), MA (McM), PhD (Ott)
M.F. Wideen BEd, BA, MEd (Sask), PhD (Colorado)
P.H. Winne BSEd, MEd (Bucknell), PhD (Stan)
B.Y.L. Wong BA (Keele), MA (Vic, BC), EdD (Br Col)

Associate Professors
S. Bailin BA, BEd, MEd, PhD (Tor)
J.D. Beynon BA (Brooklyn), MA (Brown), PhD (Union Grad Sch)
J. Blaney BEd, MEd (Br Col), EdD (Calif), Vice President, Simon Fraser University at Harbour Centre and Continuing Studies
R. Case Dip Ed (Vic, BC), MA, PhD (Br Col)
A.J. Dawson BSc (Alta), MA (Missouri), PhD (Alta)
R.D. Gehlbach BA, MS (Ill), PhD (Tor)
P.P. Grimmett BA (N'cle, UK), BEd (Keele, UK), MA, MEd (Alta), EdD (Br Col)
C.M. Hamm BA (Br Col), MA (Col), PhD (Lond)
A.O. Horvath BA (Sir G Wms), MSW (McG), EdD (Br Col)
L. LaRocque BEd (McG), MA (Vic, BC), PhD (S Fraser)
C.M. Mamchur BA, BEd, MEd (Sask), EdD (Flor)
M. McClaren BEd, PhD (Br Col), Director of Field Relations and Teacher In-Service
T.J. O'Shea BEng (McG), BEd (Sask), MA (Manit), EdD (Br Col)
L.M. Prock BA, DipEd, MA (Auck), EdD (Ill), Director of Undergraduate Programs
S. Richmond BEd, Dip Ed (Calg), MEd (Nott), PhD (Calg)
G.P. Sampson AB (Chic), MA, PhD (Mich)
S.J. Smith DipT, BEd (Kelvin Grove CAE), MEd (Q'ld), PhD (Alta)
K. Toohey BA, MEd (Alta), PhD (Tor)
R. Zazkis BA, MA (Haifa), DSc (Israel Institute of Technology)
M. Zola BA (Brist), MEd (Leeds)

Assistant Professors
J. Dawson BA, BEd, MA, PhD (Alta)
C. Haig Brown BA, MA, PhD (Br Col)
L. Kanovsky BA (S Fraser), MA SpEd (San Diego), MPhil (Col), PhD (Col)
L. LeMaré BA (S Fraser), MA, PhD (Wat)
A.M. MacKinnon BSc, BEd, MSc (Calg), EdD (Br Col)
W.M. Roth MSc (Wurzburg, Germany), PhD (S Miss)
J.A. Scott BA, MA (Calif), PhD (Ill)
S. Senyshyn MusM, BEd (Tor), EdD (OISE)
Adjunct Professors
J. Anderson BA, LLB (Alta), LLM (Ottawa)
R. Emerson BA (Radcliffe Coll), MA (Ill)
J. Fleming BA (Br Col)
P. Kinyanjui BA (Lond), MA (Syracuse), EdD (MGSIUF)
J. Maraj BA, PhD (Birm)
G. Sinclair BA, PhD (Br Col)
D. Wheeler BSc (Lond), AcDipl (Lond)
C. Yerbury BEd, MA, PhD (S Fraser)

Laboratory Instructors
D.A. Bell BA (S Fraser)
E. Kristjanson BGS, MEd (S Fraser)
L.G. Wiebe BSc (Br Col)

Instructor
D. Dagenais BEd, MADist (McG)

Undergraduate Degrees Offered
Bachelor of Education (Honors)
Bachelor of Education

Diplomas and Certificates Offered
Certificate in Literacy Instruction
Post Baccalaureate Diploma

Undergraduate courses
Information on EDUC and EDPR undergraduate courses.

Undergraduate Programs
Director: Dr. L. Prock, 8528 Multi Purpose Complex, 778.782.3643
Advisor: Ms. J. Bicknell, 8625 Multi Purpose Complex, 778.782.3488

The BEd is designed to prepare students academically and professionally for a teaching career at both elementary and secondary school levels. The Bachelor of Education degree is a five year program composed of both academic and professional course work. Through courses surveying education from philosophical, psychological and sociological perspectives, students achieve a wide view of the education system.

The Bachelor of Education degree consists of three components: a major concentration (or two minors) from the Arts, Sciences, Applied Sciences or Business Administration faculties; a minor in Education; and the Professional Development Program (PDP).

A student considering the BEd degree should seek academic counselling for:

Lower Levels (first 60 semester hours)
Contact the Academic Resource Office
Location: 9310 Shrum Science Centre
Telephone: 778.782.4356 or 778.782.4357
Upper Levels (BEd degree, Education minors, EDUC 404, Certificate in Literacy Instruction, Post Baccalaureate Diploma)

Contact the Undergraduate Advising Office
Location: 8625 Multi Purpose Complex
Telephone: 778.782.3488

Transfer Credit
Students may be admitted to the BEd program with advance standing. Credit may be granted for appropriate work completed at other institutions to a maximum of 60 hours excluding professional education or 90 hours including an acceptable year of professional education (EDUC 401, 402 and 405).

Students in a BEd program who wish to undertake work at another institution for transfer credit must complete a letter of permission form at the Office of the Registrar to receive advance consent from the Undergraduate Advising Office.

Tri-University Summer Institute
The maximum number of credit hours offered through the Tri-University Summer Institute that can count towards a Bachelor of Education or a Post Baccalaureate Diploma in the Faculty of Education is limited to nine.

BEd Degree Requirements (General Program)
Students must complete a minimum of 150 semester hours of credit which includes the following.

- a major or two minors, completed from the Faculties of Applied Sciences, Arts or Science
- a minor from the Faculty of Education (may be fully or partially completed during EDUC 404)
- the Professional Development Program (PDP)
- within 150 credits, a minimum of 45 semester hours in upper division courses (numbered 300 and 400), not including EDUC 401, 402 and 405
- For students enrolled at the University before Fall 1991, the minimum graduation requirement in a general degree program is a graduation GPA of 2.0. The minimum graduation requirements will change for students enrolling at Simon Fraser University beginning in Fall 1991 or thereafter. These 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 taken at Simon Fraser University.

BEd Degree Requirements (Honors Program)
Students must complete a minimum of 162 hours which includes the following.

- an honors program from the Faculties of Applied Sciences, Arts or Science
- minor from the Faculty of Education (may be fully or partially completed during EDUC 404)
- the Professional Development Program (PDP)
- For students enrolled at Simon Fraser University before Fall 1991, the minimum graduation requirement for in honors program is a graduation GPA of 3.0 For those enrolled at the University beginning Fall 1991, a minimum CGPA of 3.0 and a minimum GPA of 3.0 calculated on all upper division Simon Fraser University courses is required.
- For the award of a first class honors degree, a student will normally be meet the requirements as specified by the University general regulations, which include achieving a minimum CGPA of at least 3.5.

The BEd degree must be approved by the individual departments and Education's Undergraduate Advising Office. A major (or minors) must be declared officially when completing the first 60 credit hours of the BEd. Students may change a major/minor program with consent of the Undergraduate Advising Office. However, changing a major or minor late in a program may result in a student exceeding the minimum semester hour requirements.

Education Minor
In addition to the major/minor program outside the Faculty of Education, BEd students must complete a minor in Education. Either a general minor or a specific Education minor will fulfill this requirement. This minor may be partially or fully completed during EDUC 404. See the following sections for details.
Professional Development Program

The Professional Development Program (one year teacher training program) is an integral component of the BEd degree requirements. Admission is by application. Declaration of BEd as a degree goal does not guarantee acceptance into PDP. See Professional Development Program for information.

Minors in the Faculty of Education

There are two types of Education minors for students on a BEd degree program: a general minor or a specific minor.

General Minor

A general minor is a program which consists of a coherent set of courses selected by the student to fulfill the following requirements. The general education minor is applicable to a BEd degree only.

- nine semester hours of lower division courses may be required to meet prerequisites. Students should ensure that prerequisites to the upper division courses for the minor are included in the lower division course work.
- a minimum 14 upper level hours (numbered 300 and above) is required.
- at least eight of the required 14 upper level semester hours are from courses offered by the Faculty of Education.
- Education minors are approved in advance by the Undergraduate Advising Office.

Specific Minor

A specific minor is a program consisting of a set of required and elective, as defined by the Faculty. Seminars in EDUC 402 and special placements in EDUC 405 may be required of students seeking credit for a specific minor.

Students who qualify for a BA, BBA, BSc, or BGS and have successfully completed the Professional Development Program and the requirements for a specific education minor (approved by the Faculty) may have the specific education minor recognized in their degree and entered on official records.

Students should ensure that prerequisites to the upper division courses for the minor are included in the lower division course work.

Six specific minor programs are offered. Each requires approval of the Undergraduate Advising Office. Course substitutions for specific minors must be approved by the Undergraduate Advising Office. A single upper division course will not count toward more than one minor or major program.

Minor in Educational Psychology

Educational psychology has two main items on its agenda: (1) 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; and (2) studies of how this first line of inquiry contributes to designs for instructional experiences that promote a full spectrum of students' achievements. The Minor in Educational Psychology consists of required courses that develop a broad background in educational psychology supplemented by electives that deepen fundamentals. For students planning a teaching career, it provides a research-based foundation in the psychology of teaching and learning underlying a program of professional studies. For others, the minor articulates a study of applied Psychology serving one of our society's most important aims, education of people of all ages.

Requirements

Candidates for must take two 200 level courses, three courses at the 300 level and at least two elective courses at the 400 level.

Lower Division Requirements

EDUC 220-3 Introduction to Educational Psychology
EDUC 222-2 Educational Psychology Laboratory
Upper Division Requirements
EDUC 320-3 Instructional Psychology
EDUC 325-3 Assessment for Classroom Teaching
EDUC 326-3 Classroom Management

Elective Courses
any two of:
EDUC 420-4 Cognitive Strategies in Learning
EDUC 422-4 Learning Disabilities
EDUC 425-4 School Counselling for the Classroom Teacher
EDUC 426-4 Teaching Children and Youth with Special Needs
EDUC 428-4 Nature and Nurture of the Gifted
EDUC 464-4 Early Childhood Education

Minor in Elementary School Physical Education
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 take 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 Current Topics in Human Nutrition
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 220-3 Human Foods and Nutrition
KIN 241-3 Sports Injuries - Prevention and Rehabilitation
PSYC 180-3 Brain and Behavior

This minor is normally available to Fall semester entry PDP students only. 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 relating to these requirements will be made available during EDUC 401. The minor in Elementary School Physical Education may not be declared on a student's degree program until all prerequisites, including a practicum placement in EDUC 405, have been met.

Required Courses

Students are required to complete a minimum of 14 semester hours, as specified below.

EDUC 459-4 Instructional Activities in Elementary School Physical Education
EDUC 479-4 Designs for Learning: Physical Education

The remaining six semester hours must be selected from the following courses. These remaining courses may be completed prior to entering the Professional Development Program, during EDUC 404, or during any subsequent semester prior to degree completion.

KIN 303-3 Kinanthropometry
KIN 320-3 Cultural Aspects of Human Movement
KIN 343-3 Fitness Appraisal and Guidance
KIN 367-3 Psychology of Motor Skill Acquisition
KIN 370-3 Biomechanics in Physical Activity
KIN 375-3 Physiological Basis of Growth and Development Auxology
KIN 470-3 Motor Activities Laboratory I
KIN 471-3 Motor Activities Laboratory II
PSYC 302-3 Learning

**Secondary School Physical Education**
Only under exceptional circumstances will the PDP consider secondary physical education applicants who have obtained a Kinesiology major or minor (in addition to one other teachable area) at Simon Fraser University. For further information please contact the Director of Professional Programs at 778.782.4326 or the Assistant to the Associate Dean at 778.782.3620.

**Minor in Early Childhood Education**
The minor in Early Childhood Education provides a focus for students wishing to work with children aged three through eight.

**Lower Level Prerequisite**
PSYC 250-3 Child Psychology

**Upper Level Requirements**
Students must complete a minimum of 15 semester hours as specified below.

EDUC 464-4 Early Childhood Education

*and two of*
EDUC 465-4 Children's Literature
EDUC 477-4 Designs for Learning: Art
EDUC 478-4 Designs for Learning: Music
EDUC 479-4 Designs for Learning: Physical Education

*and one of*
EDUC 422-4 Learning Disabilities
EDUC 441-4 Multicultural Education
EDUC 472-4 Designs for Learning: Language Arts
EDUC 473-4 Designs for Learning: Reading
EDUC 474-4 Designs for Learning: Social Studies
EDUC 475-4 Designs for Learning: Mathematics
EDUC 476-4 Designs for Learning: Natural Sciences
LING 362-3 English as a Second Language

**Minor in Environmental Education**
The minor in Environmental Education develops teachers' skills in the design and operation of environmental and outdoor education programs from kindergarten through Grade 12, and in the organization and operation of residential and day centre outdoor education programs, wilderness outdoor recreation programs, and other interdisciplinary environmental school programs.

**Prerequisite Courses**
Students must complete a minimum of nine hours selected from the following.

BISC 003-3 Ecology and the Population Explosion
BISC 102-4 Introduction to Biology
*BISC 204-3 Introduction to Ecology
EDUC 240-3 Social Issues in Education
GEOG 100-3 Human Geography
GEOG 111-3 Physical Geography
*GEOG 215-3 Biogeography
GEOG 241-3 Social Geography
KIN 142-3 Introduction to Kinesiology
PHIL 001-3 Critical Thinking
PHIL 120-3 Facts and Values
PSYC 106-3 Social Issues
SA 150-4 Introduction to Sociology
SA 202-4 Modern Industrial Society

*Students with credit for GEOG 215 may not receive credit for BISC 204.

Required Courses
Students must complete a minimum of 14 semester hours as specified below.

EDUC 452-8 Environmental Education

plus two of
BISC 304-3 Animal Ecology
BISC 306-3 Invertebrate Biology
BISC 310-3 Plants and Animals of British Columbia
BISC 317-3 Insect Biology
BISC 337-3 Comparative Morphology, Distribution and Evolution of Vascular Plants
BISC 404-3 Plant Ecology
EDUC 433-4 Philosophical Issues in Curriculum
EDUC 471-4 Curriculum Development: Theory and Practice
EDUC 474-4 Designs for Learning: Social Studies
EDUC 476-4 Designs for Learning: Natural Sciences
EDUC 479-4 Designs for Learning: Physical Education
EDUC 482-4 Designs for Learning: Educational Uses of Computers
GEOG 322-4 World Resources
GEOG 344-4 Geography of Modern Industrial Societies
GEOG 369-4 Human Microgeography
GEOG 421-4 Geography of Resource Development

Minor in Learning Disabilities
This minor enhances understanding of learning disabilities, and provides competence in identification and non-clinical treatment of learning disabilities.

Required Lower Division Course
EDUC 220-3 Introduction to Education Psychology

Recommended Lower Division Courses
It is strongly recommended that students intending to complete this minor program complete at least one of the following courses.

KIN 110-3 Current Topics in Human Nutrition
PSYC 100-3 Introductory Psychology I
PSYC 102-3 Introduction to Psychology II
PSYC 180-3 Brain and Behavior
PSYC 250-3 Child Psychology
PSYC 221-3 Introduction to Cognitive Psychology

Successful completion of 18 upper division semester hours of which 15 credits are earned by completing four required courses.

Required Upper Division Courses
EDUC 320-3 Instructional Psychology
EDUC 422-4 Learning Disabilities
EDUC 424-4 Learning Disabilities: Laboratory
EDUC 473-4 Designs for Learning: Reading
Recommended Upper Division Courses
The remaining three semester hours must be selected from the following.

- EDUC 326-3 Classroom Management and Discipline
- EDUC 426-4 Teaching Children and Youth with Special Needs
- EDUC 467-4 Curriculum and Instruction in Teaching English as a Second Language
- EDUC 475-4 Designs for Learning: Mathematics

**Joint Minor in French and Education**
This program, offered jointly by the Department of French and the Faculty of Education, is intended for students considering a career as a teacher in either a core French or immersion program. It provides students with insight into French-language teaching as a career and broadens knowledge and control of French and its cultural aspects that relate directly to classroom situations.

While this joint minor is not required for PDP admission, students should complete it as part of their degree prior to application for PDP admission. It may enhance their chances of successfully passing PDP's French language entry test. Those majoring in French and contemplating a career in teaching are should consider adding this minor to their qualifications - not as a substitute for any courses in the French major but as an enhancement of that program.

**Prerequisite Course**
* EDUC 280-3 Teaching French in BC

**Required Courses**
- EDUC 450-4 Classroom French Curriculum Studies
- EDUC 451-4 Classroom French Curriculum Practices
- FREN 310-3 Linguistics and French Language Learning
- FREN 311-3 Acquisition of Vocabulary
- FREN 312-3 Corrective Phonetics

See Undergraduate Courses for French course descriptions and prerequisites.

* Offered alternately in French and English. When completed in French the prerequisite is FREN 202. There is no prerequisite when completed in English.

**Certificate in Literacy Instruction**
Contact the Undergraduate Advising Office.
Location: 8625 Multi Purpose Complex
Telephone: 778.782.3488

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 practices in the field and develops practical skills.

Completion of the certificate is normally within five years of admission to the program.

**Program Requirements**
Students must complete a total of 29 credit hours, of which 23 hours are earned by completing 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 Composition
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 the Essay as Literature

In addition to the above requirements, students must complete at least an additional six credit hours in Faculty of Education or Faculty of Arts 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 420-4 Cognitive Strategies in Learning
EDUC 422-4 Learning Disabilities
EDUC 441-4 Multicultural 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
ENGL 370-4 Studies in Language
ENGL 371-4 Advanced Composition: Theory and Practice
ENGL 372-4 Creative Writing
HUM 320-3 The Philosophical Question of the Humanities
HUM 321-3 The Humanities and Critical Thinking
LING 260-3 Language, Culture and Society
PHIL 001-3 Critical Thinking
PSYC 304-3 Motivation
PSYC 306-3 Psychological Assessment Procedures
SA 304-4 Social Control
SA 333-4 Schooling and Society

Notes

• Credits applied toward this certificate may not be applied toward any other Simon Fraser University certificate or diploma, but they may be applied toward major or minor program requirements or toward a Bachelors degree under the normal regulations governing those programs.
• At least 15 of the 29 required credit hours must be completed at Simon Fraser University.
• Students must achieve a minimum grade point average of 2.0, 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, however, 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
Contact the Undergraduate Advising Office.
Location: 8625 Multi Purpose Complex
Telephone: 778.782.3488

This program is for students who have completed a Bachelors degree and wish to raise their teacher qualifications. Students should speak directly with the Teacher Qualification Service or their school district regarding courses that are acceptable for this change.
Program Requirements
Successful completion, within five years, of an approved program comprised of 30 credit hours of upper division or graduate course work and any necessary prerequisites. A minimum of 15 of the 30 credits must be earned in Education and a maximum of 12 may be transfer credits. Students must maintain a grade point average of 2.5 on courses used for the diploma.

Courses taken during the EDUC 404 semester may not be used toward a Post Baccalaureate Diploma.

Joint Post Baccalaureate Diploma In English As a Second Language
Refer to the Department of Linguistics section.

Professional Development Program (PDP)
Director: Dr. S. Wassermann, 8531 Multi Purpose Complex, 778.782.4326

Admissions Advisor: Ms. D. Kelso, 8624 Multi Purpose Complex, 778.782.3620 / 778.782.3149

External Programs: 8625 Multi Purpose Complex, 778.782.3488 / 778.782.3209

Admission
Applicants to this program must be attending Simon Fraser University or be admissible to the University (see Admission and Readmission).

- Candidates who attended Simon Fraser University in one or more of the three semesters prior to intended registration in the Professional Development Program are required to submit the Professional Development Program Application to the PDP Admissions Office in the Faculty of Education.
- Candidates who have not attended Simon Fraser University previously, or who have not attended in any of the three semesters prior to their intended registration in the Professional Development Program, must submit the Professional Development Program Application form and the Application for Admission form to PDP Admissions Office, Faculty of Education.
- All applications should be submitted to the PDP Admissions Office by January 15 for the Fall Semester and May 15 for the Spring Semester. Late applications will be considered only if space is available.
- All applicants must pay the $35 PDP application fee directly to the PDP Admissions Office, Faculty of Education.

Elementary Applicants
Elementary applicants must, by the date of application, have completed a minimum of 76 semester hours of courses acceptable for credit at Simon Fraser University including the following prerequisite courses.

- six semester hours in English,
- one course (three semester hours) in each of Canadian History, Canadian Geography, Mathematics (MATH 190 is recommended), Laboratory science

Elementary applicants are required to have completed a minimum of 76 semester hours of post-secondary credit (this should include 16 semester hours of upper division course work), including prerequisite courses, prior to application to the program. While not required, it is preferred that elementary candidates' applications show work experience in the teaching area of the elementary school, e.g. humanities, fine and performing arts, math, science, practical arts, physical education.

Secondary Applicants
Applicants who plan to teach at the secondary level must fulfill the requirements of either a teachable major subject or two teachable minor subjects.

Teachable Majors or Minors
Biology
Canadian Studies
Chemistry
Computing Science (minor only)
Simon Fraser University students who have not completed an appropriate Bachelors degree must have completed a minimum of 90 semester hours by the time of application and to have completed 106 semester hours one full semester prior to commencing PDP. Students from other institutions may apply prior to the completion of their degree, but such students are required to have completed the degree one full semester prior to commencing PDP.

Secondary applicants must complete six semester hours of English one full semester prior to commencing PDP.

**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, and the other in work related settings) must be submitted before the application is considered.
- A cover letter and resume must also be submitted by all applicants (refer to PDP application package for additional information).
- The Human Relations Incident (HRI) and Teaching Incident (TI) must also be submitted by all applicants (refer to PDP application package for additional information).
- Before admission to the program, applicants are required to demonstrate competence in written and oral English (and written and oral French in the case of French Immersion and French as a Second Language programs).
- Students may be asked to submit evidence of good health before being considered for admission to the program.
- Students may be required to have an interview before being considered for admission to the program.
- In the event that the number of applicants to the Professional Development Program exceeds facilities and staffing capabilities, the Admissions Committee will select those candidates considered to be best qualified.
- All students must complete a minimum of six semester hours in the Faculty of Education (EDUC 401, 402 and 405 may not be used for this purpose) by the end of PDP. This is not required prior to admission to the program.

*Program Description*

The Professional Development Program is three semesters in duration. Professional studies and activities are arranged in the following sequence.

First Semester of Professional Development Program
EDUC 401-8 Introduction to Classroom Teaching
EDUC 402-7 Studies of Educational Theory and Practice

(These courses are not offered in Summer semester)

EDUC 401 and 402 are offered as an integrated program throughout the first semester of PDP. This integrated program provides students with theory and practice at well planned complementary intervals, building knowledge and skills in both areas. 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 appointed by the University. Students observe, teach and participate in school routines and programs.
During EDUC 402, students undertake 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.

Notes:
French Education: In the Fall semester only, 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. Applicants are advised that entry to these programs may be competitive.

Physical Education: Secondary physical education will not be available on a regular basis. The elementary school physical education minor is normally available in the Fall semester only. Entry to this program is highly competitive.

Special Focus Modules: Special focus modules are offered during Fall and Spring semesters. Entry to these programs may be competitive.

Second and Third Semesters of Professional Development Program

EDUC 405-15 Teaching Semester
(Not offered in Summer semester) Prerequisites: EDUC 401 and 402.

A semester of classroom experience supervised by University appointed School Associates. The school placement is appropriate to the grade level and subject specialties in which the student expects to obtain certification. Students are expected to assume a large measure of responsibility and to participate in a wide range of teaching and supervisory activities.

School placements in EDUC 405-15 are selected from specified school districts within the province. Student placements should complement the grade level and subject specialties appropriate to certification requirements.

EDUC 404-0 Semester on Campus
(Normally taken in the Summer semester) Prerequisites: EDUC 401 and 402.

Course programming in this semester 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 14-18 semester credit hours of studies in Education and/or other faculties.

Note: Students completing degrees from the Faculties of Applied Sciences, Arts, Business Administration or Science may apply credit for EDUC 404 towards that degree. Students taking PDP who already have degrees may count appropriate EDUC 404 courses toward a Post Baccalaureate Diploma.

To be recommend 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

- EDUC 401, 402, 405 are to be regarded as full-time professional studies and may not be taken in conjunction with other academic or professional courses.
- Students must complete normal Simon Fraser University registration procedures before commencing studies in any semester of the Professional Development Program.
- Students will be required to meet program goals as outlined in the Professional Development Handbook.
- This program is normally completed in three consecutive semesters. However, those with valid reasons may be given permission by the Director of Professional Programs to interrupt their participation in the program. A formal request from the student must be submitted in writing to the Director.
- An interruption from the program requested by a student may normally last no longer than a maximum of four semesters.
• Students who have indicated their intention to undertake a given semester 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
  o Students who withdraw from EDUC 401/402 must re-apply to the Admissions Committee.
  o Re-entry into Education 405 may be achieved after completing a re-entry application and submitting it to the Director of Professional Programs. Deadlines for re-application are as follows: May 15 for the Fall semester, September 15 for the Spring semester
  o Permission to re-enter the program will be granted if: I) the student has satisfactorily met the conditions for re-entry established when he/she interrupted or withdrew from the program; ii) space is available in the semester for which the student applies
  o Students who re-enter PDP should apply for re-entry within four semesters of withdrawal. Students who do not re-enter within the specified time may be required to complete additional course work before re-admission.
  o 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 semester. An Application for Re-entry to PDP must be completed.

• The academic and professional records of all students who have completed the three semesters of the Professional Development Program will be subject to review by the Faculty before a recommendation for certification is forwarded to the College of Teachers.

**Special Professional Program Opportunities**

EDUC 405-15 Course Challenge
Students with a minimum 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.

• Applications for course challenge will be considered according to generally established requirements and procedures. See Registration section.
• Normally, students can register in course challenge for EDUC 405 only while registered 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.
• Application forms are available from the Director of Professional Programs and must be submitted by May 1 for the Fall semester, September 15 for the Spring semester

**External Professional Development Programs**

There are three external Professional Development Programs that operate under the auspices of a consortia of local community colleges, northern school districts and Simon Fraser University. The consortia invite applications from students with strong local northern connections. (Deadlines and admission procedures are different from the Lower Mainland application.)


NWTEC - Northwest Teacher Education Consortium (Terrace, Kitimat, Prince Rupert, Bulkley Valley). Phone 778.782.3488 for information.

HEART (Helping Expand Access for Returning Teachers)

EDUC 406-5 (HEART) Supervised Observation and Teaching
This EDUC 406 option within Professional Programs is a supervised orientation/observation and teaching sequence of approximately 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 British Columbia school system and to update teaching skills to acquire certification.
EDUC 406 is normally offered in the Fall and Spring semesters only and space is limited.

Grading will be on a pass/withdraw basis.

Applicants to HEART must be attending Simon Fraser University or be admissible to the University (see Admission and Readmission). Candidates who have not attended Simon Fraser University previously, or who have not attended in any of three semesters prior to intended registration in EDUC 406, must submit the Application for Undergraduate Admission form to the Office of the Registrar. Students intending to complete Simon Fraser University courses in preparation for application to EDUC 406 should contact the Faculty of Education (MPX 8624, telephone 778.782.3209 or 778.782.3488).

Application forms for this component of HEART should be received by May 1 for the Fall semester, September 15 for the Spring semester.

Certification

Simon Fraser University does not confer teaching certificates. The College of Teachers is the only body in British Columbia 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 non-expiring teaching credential.

Note: Persons convicted of a criminal offence and considering a teaching career should write to the College of Teachers for clarification of their status before undertaking a teacher education program.

Types of Certificates

There are two types of teaching certificates. The standard 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 four or five year program of professional and academic studies culminating in a degree.

The standard certificate requires a minimum of 76 semester hours (five semesters) in Applied Sciences, Arts, Business Administration, Science, or Education, plus the Professional Development Program (three semesters). The standard certificate so obtained (a minimum of 120 semester hours 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 semester hours in the Department of English
- a minimum of six semester hours in the Faculty of Education. EDUC 401, 402 and 405 may not be used for this purpose.

Applying for a Certificate

The Faculty of Education sends the College of Teachers a list students who have completed teacher certification requirements. At the same time, each student is mailed an Application for Teacher's Certificate of Qualification form. Students must forward the completed form to the College of Teachers for formal evaluation for certification. Applications for upgrading of certificate (e.g., when a teacher wishes to convert a Standard Certificate to a Professional Certificate) must also be made to the College of Teachers.

Note: There is a delay between the completion of the Professional Development Program and the forwarding to the College of Teachers of documented recommendation for a teaching certificate.

For those applying for certification on completion of a degree, attention is drawn to the University regulations in this Calendar relating to final deadlines for submission of applications for graduation. Exceptions cannot be made.
Teacher Qualification Service
This service is sponsored jointly by the BC Teachers' Federation and the BC School Trustees 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. Request for evaluation forms are available from the Teacher Qualification Service, 103-1765 West 8th Avenue, Vancouver, BC V6J 5C6, or from the PDP Admissions Office, Faculty of Education, Simon Fraser University.

Faculty of Science
Location: P9451 Shrum Science Centre
Telephone: 778.782.3771, 778.782.3424 Fax
Dean: C.H.W. Jones BSc, PhD (Manc)

See Graduate Studies for research interests of faculty members.

The Faculty of Science offers programs in

- Applied Mathematics
- Biochemistry
- Biological Science
- Chemical Physics
- Chemistry
- Earth Sciences
- Environmental Science
- General Science
- Geography
- Management and Systems Science
- Mathematical Physics
- Mathematics and Computing Science
- Mathematics and Statistics
- Physics
- Quaternary Studies

Undergraduate Degrees Offered
- Bachelor of Science (Honors)
- Bachelor of Science

Certificate and Diplomas Offered
- Certificate in Actuarial Mathematics
- Post Baccalaureate Diploma in Aquaculture
- Post Baccalaureate Diploma in Biological Sciences
- Post Baccalaureate Diploma in Environmental Toxicology
Major Program
A major program provides a broad general education in several fields of study and some specialization in one field known as the major. Optional programs which include double majors or majors and minors, are possible. General regulations are given below in Faculty of Science requirements for the BSc (major). For details on specific course requirements, refer to the academic department concerned. Students who do not wish to pursue any specialization may undertake a Bachelor of General Studies (BGS) degree. Information regarding this latter option may be found in the Faculty of Arts requirements.

Requirements for Major

- Students must complete 120 semester hours of credit including the following.
  - a minimum of 28 semester hours of upper division credit courses numbered 300 and 400 as specified by the major program
  - additional semester hours of upper division credit bringing the total to a minimum of 44 semester hours of upper division credit
  - a minimum of 12 semester hours in subjects taken outside the Faculty of Science (excluding EDUC 401 to 407) including a minimum of 6 semester hours taken in the Faculty of Arts
  - a grade point average of 2.00 in the upper division courses required in the program

- additional requirements as specified by the major program and in the General Information section of this Calendar may be required.

For students enrolled at the University beginning Fall 1991 or thereafter

- upper division grade point average (GPA) and cumulative grade point average (CGPA) as specified in the General Information section of this Calendar

or

For students enrolled at the University before Fall 1991

- a graduation GPA of 2.00 calculated on the required 120 semester hours, or on the last 60 semester hours taken including the 44 semester hours of upper division credit

  - a GPA of 2.00 in the upper division courses required in the program

Honors Program
An honors program provides a broad general education with "in depth" study in a single field and requires the student to concentrate his/her studies in the 5th to 8th levels in the chosen field. This program is recommended for students who intend to proceed to advanced degrees, provided that they meet the entrance requirements and maintain the required standing.

Students applying for admission to an honors program will normally have a cumulative grade point average of 3.00 (B standing). A student is expected to maintain this standard to continue in the honors program.

Requirements for Honors and Honors First Class

- Students must complete 132 semester hours of credit as prescribed by the honors program which include the following.
  - a minimum of 48 semester hours of upper division credit in one subject area
  - additional semester hours of upper division credit bringing the total to a minimum of 60 semester hours of upper division credit
  - a minimum of 12 semester hours in subjects taken outside the Faculty of Science (excluding EDUC 401 to 407) including a minimum of six semester hours taken in the Faculty of Arts
• additional requirements as specified by the honors program and in the General Information section of this Calendar.

Program Guidelines
• At the outset, students are requested to indicate their intended major so as 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 the Academic Resource Office 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 credit hours.
• New students intending to take more than 15 semester hours in their first semester of studies should seek advice from the Academic Resource Office, 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 student may not use the same upper division course for formal credits towards both programs. One course might fulfill "content" requirements of two related areas, but in such a case additional replacement credits in upper division work satisfactory to one of the departments or program committees must be taken in one of the subjects to fulfill overall credit for the two programs involved.
• Programs totalling more than 18 hours of credit per semester require the approval of the Dean.

Minor Programs
Students should consult advisors in appropriate departments when deciding on course selection. Suggested programs and prerequisites are given in each department's Calendar entry. An average grade of at least 2.00 is required in those upper division courses used to satisfy the requirements for a minor.

General Science Program
This program, consisting of 120 credit hours, provides a broad general education in several fields with some specialization in at least two fields. It requires two Faculty of Science minors in two subject areas, including the lower division prerequisites, chosen from two of six groupings below. Completion of two minors will require a minimum of 28 semester hours, but some additional credit hours may be required depending on the stated individual requirements for the minors chosen.

See General Science Program further on in this Calendar.

University College of the Fraser Valley Program
University College of the Fraser Valley in Abbotsford, BC offers a program leading to a Bachelor of Science degree. This degree is offered in association with the Faculty of Science and is issued by Simon Fraser University.

Co-operative Education Programs
Co-operative Education programs are available in Biological Sciences, Chemistry, Mathematics and Physics. Details are given in the departmental sections and in the Co-operative Education section.

Associate in Science Diploma
Students who have completed the Associate in Science Diploma from the University College of the Fraser Valley, Douglas College, or Kwantlen College are guaranteed admission to the Faculty of Science provided that they meet the requirements for University admission.

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 semester hours in a science degree program and are accepted into an accredited professional program in medicine, dentistry, or veterinary medicine are eligible for a Bachelor of Science degree from Simon Fraser University after successful completion of the first year of professional study. To be acceptable, courses taken in the professional
program must not duplicate courses already taken at Simon Fraser University and must be acceptable for transfer credit in a major or honors degree program. Candidates must apply for transfer credit and a Bachelors degree through the Office of the Registrar, Simon Fraser University. Since official transcripts of the work completed in the first year of the professional program are required for transfer credit purposes, application for graduation should be delayed until the Summer semester following the completion of requirements.

**Requirements for Students Wishing to Transfer into Professional Schools**

Students wishing to transfer into professional schools are advised to contact the professional school admissions office to confirm the course requirements.

**Engineering Transfer Program**

*Advisors*

Ms. M. Saif, School of Engineering Science, 8815 Applied Sciences Building, 778.782.3119  
Dr. G.A.C. Graham, Department of Mathematics and Statistics, 10527 Shrum Science Centre, 778.782.3337  
Dr. R. Frindt, Peng, Department of Physics, P8466 Shrum Science Centre, 778.782.3161

**Engineering Study in BC**

To complete engineering degree studies in British Columbia, students studying in the Engineering Transfer program at Simon Fraser University must transfer to an Engineering program at Simon Fraser University, the University of British Columbia or the University of Victoria.

**Transfer to the University of British Columbia's Engineering Program**

Students who have taken two semesters of science at Simon Fraser University may be considered for admission to first year Engineering at the University of British Columbia if they have an overall GPA of at least 2.5, including all attempted courses. A GPA of at least 2.7 must also be achieved in Mathematics, Physics and Chemistry with a grade of no less than a C in these subjects.

Students who complete the following courses and who meet the University of British Columbia Faculty of Applied Science admission standards will be eligible to be considered for admission to second year Engineering, provided they have an overall GPA of 2.5, including all attempted courses. For such students, the University of British Columbia course ASPC 151, Computer Aided Engineering Graphics, must be taken along with the normal second year program at the University of British Columbia.

- CHEM 102-3 General Chemistry I
- CHEM 103-3 General Chemistry II
- CHEM 115-2 General Chemistry Laboratory I
- CMPT 102-3 Introduction to FORTRAN for Science Students
- MATH 151-3 Calculus I
- MATH 152-3 Calculus II
- MATH 232-3 Elementary Linear Algebra
- MATH 262-4 Engineering Mechanics I
- PHYS 120-3 Physics I
- PHYS 121-3 Physics II
- PHYS 131-2 General Physics Laboratory B

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 the Essay as Literature

It is the student's responsibility to ensure that prerequisites are taken in the proper order and that application for admission deadlines at the University of British Columbia are observed.

Students who lack credit for some of these courses may still be accepted for admission to the second year of the University of British Columbia Engineering program, contingent upon subsequently making up the course credit short-fall.
In appropriate circumstances and with careful planning, up to three courses (or course and associated laboratory combinations) may be taken at Simon Fraser University during the Summer semester immediately prior to becoming a student at the University of British Columbia. The Associate Dean of the Engineering program at the University of British Columbia must be consulted if this option is to be pursued.

Additional Transfer Credit

Additional courses, which will reduce the number of courses that must be taken subsequently at the University of British Columbia, may also be transferable; in particular, the following Simon Fraser University courses.

- MATH 251-3 Calculus II
- MATH 252-3 Vector Calculus
- MATH 263-4 Engineering Mechanics II
- MATH 310-3 Introduction to Ordinary Differential Equations
- MATH 314-3 Boundary Value Problems

These courses have a University of British Columbia counterpart, respectively: MATH 253, 254, PHYS 270, MATH 255, 257. Each of these courses is required by several of the second (or subsequent) year University of British Columbia Engineering programs. The Associate Dean of the Engineering program at the University of British Columbia must be consulted if these courses are included in the transfer credit request to UBC.

Transfer to Simon Fraser University's Engineering Science Program

This is a restricted entry program with a fixed enrollment limit. Students planning entry through the Engineering Transfer program should discuss their plans with the Engineering Science advisor.

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 any two of ENGL 101, 102, 103, 104
- BICH 222 / 321 (preferred); BISC 201 / 301 (accepted)
- BISC 101 / 102
- CHEM 102 / 103 / 115 / 118, 150 (or 251) / 250 (or 252) / 155 (or 256) / 255 (or 356)
- MATH 151 / 152 (or 157 / 158)
- PHYS 101 / 102 / 130 (or 120 / 121 / 131)

Additional courses are required to complete six semesters (90 semester hours) of study. These should be chosen in accordance with a specific degree program at Simon Fraser University but students are advised to select some courses from disciplines in the humanities and social sciences.

Contact address for student admissions to Dentistry
Faculty of Dentistry
University of British Columbia
350 - 2194 Health Sciences Mall
Vancouver, BC V6T 1W5

Faculty of Forestry at the University of British Columbia

The Faculty of Forestry offers a four year degree program. The new curricula in Forestry allow two admission pathways. One is directly from high school, the other follows a year of university science at the University of British Columbia or its equivalent at another post secondary institution.

If first year science is taken at Simon Fraser University, the following courses are required.

- ENGL one of 101, 102 or 103 plus ENGL 104
- BISC 101 / 102
- CHEM 102 / 103 / 115 / 118
- MATH 151 / 152 (or 157 / 158)
- PHYS 101 / 102 / 130 (or 120 / 121 / 131)
Students who elect to apply after one year of science will need three or four years after completion of the first year science to fulfill the Forestry degree requirements, depending on the Forestry program chosen.

Contact address Co-ordinator of Student Services
Faculty of Forestry
University of British Columbia
MacMillan Building
270 - 2357 Main Mall
Vancouver, BC V6T 1Z4
Telephone (604) 822-3547

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.
ENGL any two of ENGL 101, 102, 103, 104
BICH 222 / 321 (or 301 / 302)
BISC 101 / 102
CHEM 102 / 103 / 115 / 118, 150 (or 251) / 250 (or 252) / 155 (or 256) / 255 (or 356)

Official admission requirements will remain as defined in the University of British Columbia Faculty of Medicine Calendar and may be subject to change.

Applications for entrance into the University of British Columbia Faculty of Medicine considerably exceeds the number of available places in the entering class; therefore, students planning to enter into Medicine after the sixth level (i.e. 90 credit hours) of work at Simon Fraser University should arrange their programs so that they will be able to complete a major degree at Simon Fraser University in the event that they are not accepted by the Faculty of Medicine.

Contact address for the Admissions Office
Faculty of Medicine
University of British Columbia
317 - 2194 Health Sciences Mall
Vancouver, BC V6T 1Z3
Telephone (604) 822-4482

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 Pharmacy.
ENGL any two of 101, 102, 103, 104
CHEM 102 / 103 / 115 / 118
MATH 151 / 152 (or 154 / 155)
BISC 101 / 102 and
PHYS 101 / 102 / 130 (or 120 / 121 / 131)

Students should refer to a current Calendar of the University of British Columbia for specific information. Also, students should consult the Faculty of Pharmaceutical Sciences at the University of British Columbia.

Contact address for Admissions.
Faculty of Pharmaceutical Sciences
University of British Columbia
2146 East Mall
Vancouver, BC V6T 1Z1
Telephone (604) 822-3014

The School of Rehabilitation Sciences at the University of British Columbia offers programs in Occupational Therapy and Physical Therapy. The following courses are prerequisites.

*Occupational Therapy (30 credit minimum)*
BISC 101 and 102
ENGL (3 credits), ENGL 199 recommended
PSYC 100 and/or 102
SA (3-6 credits at the 100 or 200 level)
STAT 270 or 101 or 102 or 103
Electives 6-12 credits, CHEM 102, 103, 115, 118 recommended

Physical Therapy (30 credit minimum)
BISC 101 and 102
CHEM 102, 103, 115 and 118
ENGL (3-6 credits), ENGL 199 recommended
PSYC 100 and/or 102
STAT 270 or 101 or 102 or 103
Electives (3-9 credits)
Physics 11 (or first year university physics)

A minimum of 70 hours of experience with persons with disabilities is required by February 28. An orientation session is offered in November; intending applicants should contact the School in September for information.

Contact address The School of Rehabilitation Sciences
The University of British Columbia
T325 - Koerner Pavilion
2211 Wesbrook Mall
Vancouver, BC V6T 2B5

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, 104
BICH 301 / 302 (or BISC 201 / 301) (or BICH 222 / 321)
BISC 101 / 102 / 202 / 303
CHEM 102 / 103 / 115 / 118 / 150 (or 251) / 155 (or 256)
MATH 151 / 152 (or 154 / 155 or 157 / 158) STAT 102 may be substituted for MATH 152, or 155 or 158
PHYS 101 / 102 / 130 (or 120 / 121 / 131)
Electives 15 semester hours

Elective choices should be based upon the program in which the student is enrolled, and may include subjects not related to science. Students are encouraged to choose electives which liberalize or broaden perspectives. The electives taken 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
Saskatoon, Saskatchewan S7N 0W0

General Note
All course requirements should be completed by the end of the Spring semester preceding the proposed date of entry to a professional school.

Teaching Careers
Students interested in elementary or secondary teaching should consult the Faculty of Education regarding requirements for entry into the Professional Development Program and Teacher Certification before entering the upper levels of their programs. (See also the Faculty of Education section.)
Languages other than English
Most graduate schools require proficiency in one or two languages other than English. Students who intend to pursue studies at the graduate level at another university are advised to include in their programs at least six semester hours of course work in languages other than English. In general, the most useful languages for reading research papers are German, French and Russian.

General Education Courses
Several courses have been designed with no prerequisite structure and are meant to convey a broad perspective of scientific outlook to students who are non-specialists in science. These courses are as follows.

Science
SCI 010-3 Contemporary Topics in the Natural Sciences (This course may be offered by any of the Science departments.)

Biological Sciences
BISC 003-3 Ecology and the Population Explosion
BISC 004-3 Apiculture: An Introduction to Bees and Beekeeping
BISC 105-3 Biology and the Human Species

Chemistry
CHEM 003-3 Chemistry, Technology and Society
CHEM 004-3 Pollution, Energy and Resources

Continuing Studies
General Office
1300 Lohn Building, West Mall Complex, Telephone: 778.782.4565, 778.782.3851 Fax

Simon Fraser University at Harbour Centre
515 West Hastings Street, Vancouver V6B 5K3, Telephone: 778.782.5100, 778.782.5098 Fax

Centre for Distance Education
1300 Lohn Building, West Mall Complex, Telephone: 778.782.3524, 1-800-663-1411 (within BC), 778.782.4964 Fax

Vice President Harbour Centre and Continuing Studies
J.P. Blaney BEdm MEd (Br Col), EdD (Calif)

Associate Dean
J.C. Yerbury BEd, MA, PhD (S Fraser)

K. Braid BA (Mount Allison) MA (S Fraser); Program Director, Labour Program

J. Collinge BA, MA (Education), PhD (S Fraser); Program Director, Psychology/Gerontology/Criminology/Sociology/Anthropology (Distance Education)

K. Conibear BA (Alta), MA (Oxf); Associate Director, Senior Citizens Program

T. Copithorne BA (Keio), MA (Yale); Program Director, Japan Program, David Lam Centre for International Communication

A. Cowan BA (Tor), MA (Car); Associate Director, Canadian Centre for Studies in Publishing

W. Fraser BA (Sask), MBA (S Fraser); Program Director, Business Programs

J. Cowan BA, PhD (Br Col); Program Director, Arts; Manager, Course Production (Distance Education)

L. Goodall BA (Calg); Manager, Administration
L.J. Gunter BJ (Car), MBA (Qu); Program Director, Applied Sciences Programs

C. Hearn BA, MA (S Fraser); Program Director, The Writing and Publishing Program

H. Hoare BSc (N Ill), MSEd (Ind); Program Director

A.D. Hungerford BA, MA (S Fraser); Laboratory Instructor

C. Knight; Program Director, Information

W. Liu BA (Nankai), BA (Tenn); Program Director, International Continuing Studies Programs

M. Nance BA, MA (Calif); Program Director, Public Policy Programs; Executive Director, The Northern Justice Society

J. Oberlander BA (Smith College), MS (Col); Program Director, City Program

N. Petersen BA (S Fraser); Program Director, Professional and Tourism Programs

L. Richardson BA (Br Col); Program Director, Arts, Design and Non-Profit Sector Programs

V. Rossner BA, MA (Education) (S Fraser); Program Director, Education (Distance Education)

M. Selman BA, PhD (Br Col); Director, Extension Credit Programs

P. Southby; Program Director, Conference Services

L. Teles BA (Goethe, Frankfurt), MA (Geneva), PhD (Tor); Program Director, Applied Sciences/Business Administration/Technology-Mediated Instruction (Distance Education)

Y. Walls BA (Taiwan), MA (Wash); Program Director, Chinese Program, David Lam Centre for International Communication

Y. Wosk BA (Br Col), MA (Yeshiva, NY), PhD (W. Lyon), PhD (Boston); Program Director, Interdisciplinary Studies

J.C. Yerbury BEd, MA, PhD (S Fraser); Associate Dean; Director, Centre for Distance Education

The Office of Continuing Studies assists faculties, schools and departments with the development and implementation of continuing studies programs, which include both degree credit programs and credit-free instruction. Booklets, bulletins, and brochures on part-time credit study, credit free instruction, distance education courses, and other programs are available on request from the office, telephone 778.782.4565 or 778.782.5100.

Credit Study

Students seeking degree credit on a part-time basis by either day or evening study are governed by the same regulations, have the same privileges, and follow the same admission and registration procedures as full-time students. Pertinent sections of this Calendar should be consulted concerning admission, registration, academic programs available, program requirements, tuition and student activity fees. Specific details regarding many of the individual credit programs are available in separate booklets and brochures published each semester by Continuing Studies, telephone 778.782.4565.

Part-time Degree Credit Program - On Campus

Most departments, schools and faculties offer a selection of courses in the late afternoon and evening of the Fall, Spring, and Summer semesters. Additional opportunities for part-time study are made available during the days and evenings of both Intersession (May and June) and Summer Session (July and August). A sufficient number of appropriately sequenced evening courses are available during the Fall and Spring semesters to complete degrees in ten subject areas - Anthropology, Archaeology, Business Administration, Computing Science, Economics, English, Geography, History, Psychology, and Sociology.
Requirements for minors can be completed in Canadian Studies, Communication, Criminology, Kinesiology, Mathematics, Philosophy and Political Science. Information regarding Fall, Spring, and Summer semester evening, or Intersession and Summer Session programs is available from Continuing Studies, telephone 778.782.4565.

**Extension Credit Program - Simon Fraser University at Harbour Centre**

In the Spring of 1989 the University opened a new campus in downtown Vancouver dedicated to mid-career education. Extension credit programs at Simon Fraser University at Harbour Centre relate to the advanced recurring educational needs of the business, professional and cultural communities represented in the urban core through graduate degrees and post baccalaureate diplomas; selected undergraduate and certificate programs; and intensive, specialized short courses, seminars and conferences developed from University and community resources.

University credit courses offered at Harbour Centre are directed to professional development or career change and may be applied toward certificate, post baccalaureate diploma and degree completion requirements. Many courses are components of certificate and/or diploma programs in Actuarial Mathematics, Community Economic Development, Criminology, Ethnic and Intercultural Relations, ESL Linguistics, French Language Proficiency, Gerontology, Health and Fitness Studies, Liberal Arts, Literacy Instruction, Social Policy Issues, Spanish Language Proficiency, Urban Studies, Women's Studies and the Certificate Program for Senior Citizens. In addition, many courses fall under the subject areas: Business, International Communication, Media Studies, and Publishing. General information on these programs can be found in the following section or by consulting the Index of this Calendar. New programs are currently under development and will be introduced during the academic year.

**Off-Campus Programs**

University credit courses in Education applicable to the Bachelor of Education degree and to the Post Baccalaureate Diploma Program (see below) are available at various Interior centres. The Faculty of Education also offers the Professional Development Program (teacher training) throughout the Province. Interested students should contact the Director of Undergraduate Programs, Faculty of Education, Simon Fraser University.

**Distance Education Courses**

Distance education courses in Archaeology, Biological Sciences, Canadian Studies, Communication, Community Economic Development, Computing Science, Criminology, English, Education, French, Geography, Gerontology, History, Kinesiology, Linguistics, Mathematics, Philosophy, Political Science, Psychology, Sociology/Anthropology, Statistics and Women's Studies are currently available, and additional courses are being developed. The General and Advanced Certificate Programs in Criminology are designed specifically for distance education students. The Health and Fitness Studies Certificate Program, the Liberal Arts Certificate Program, a Bachelor of General Studies degree, and a Bachelor of Arts (Criminology major) degree are available by distance education. A booklet of programs and courses is published each year. In addition to distance education credit courses, some programs in the areas described above are available for general interest or professional development on a non-credit basis. For more information, contact the Centre for Distance Education, telephone 778.782.3524; 1-800-663-1411 (toll free within BC).

**Certificate and Diploma Programs**

Post Baccalaureate Diploma Program

This program offers holders of Bachelors or advanced degrees (in any field), the opportunity to develop and follow a program of individualized study not usually provided by graduate or professional degrees. The program responds to changing educational needs, where mid-career advancement or changing career goals demand new knowledge and skills. It also affirms the established values of general education, of learning for its own sake.

The commitment for the Post Baccalaureate Diploma Program comes from the learner. Consequently, the student embarking on such a program will be actively involved, together with faculty advisors, in identifying goals and developing a program of study designed to meet those goals. Programs will consist of third and fourth year courses and possibly some graduate level courses. A graduate thesis is not required.

Individual programs are available in most disciplines in the Faculties of Applied Sciences, Arts, Education, and Science. Programs can be highly interdisciplinary in nature, or concentrate in a particular subject area.
Successful completion of the program in the Faculty of Education may raise teacher qualifications for those with a Bachelor's degree from category 4 to category 5, and, for those with a Masters degree, from category 5 to category 6. Education courses applicable to the program are offered on the Simon Fraser University campus and at various Interior sites. For additional information consult the Faculty of Education section.

Special core programs with individual options are available in Community Economic Development, Computing Science, Criminology, Environmental Toxicology, English as a Second Language, Ethnic and Intercultural Relations, Occupational Science, Social Policy Issues, Kinesiology, Public History, Gerontology, the Humanities, and Urban Studies. For core courses and other information consult the Faculty of Arts; School of Computing Science, School of Criminology, Department of Biological Sciences, Department of Linguistics, Department of Sociology and Anthropology, School of Kinesiology, Department of History, Gerontology Program, Humanities Program, and Department of Political Science requirements sections. Other core programs are under development.

Admission
A Bachelor's degree with a graduation grade point average of 2.0 from a recognized British Columbia university or 2.4 from a recognized university outside the province, or equivalent, is required. In addition students must submit a statement of objectives in undertaking the program.

Program Planning and Approval
Students must develop and prepare a written program plan with the diploma advisor in the Faculty most closely associated with their goals. Advisors will also help forward the proposed program to the appropriate Faculty Post Baccalaureate Diploma Committee for approval. Once the program is approved, students must apply in writing for permission to change and amend their program.

Program Requirements
- the successful completion of at least 30 credit hours of third and fourth year courses or graduate level courses if appropriate, approved through a faculty advisor by a Faculty Post Baccalaureate Diploma Committee. A minimum of 15 of the 30 hours must be earned in a discipline or subject area which most closely fits the learning goals of the student.
- a grade point average of 2.5 on courses used for the diploma.
- completion of lower level prerequisites if required.
- completion of program requirements normally within five years of admission.

Certificate in Actuarial Mathematics
This program prepares students to write the examinations required for admission to the Society of Actuaries as an Associate. Students completing this certificate as part of a Bachelor's degree will also obtain a minor in Mathematics. For program requirements, see the Department of Mathematics and Statistics in the Faculty of Science undergraduate section.

Certificate in Chinese Studies
The Certificate in Chinese Studies offers students the opportunity to receive recognition for a series of courses related to contemporary China. Students will be introduced to Chinese language, and will take other related courses. Part of the program will involve courses taken at a university in China, requiring extra travel and living expenditures. For program requirements, see the Chinese Studies Certificate in the Faculty of Arts undergraduate section.

Certificate in Computing Studies
This certificate provides both part time and full time students with an opportunity to obtain an understanding of the fundamentals of computers and programming without necessarily specializing in Computing Science. For program requirements, see the School of Computing Science in the Faculty of Applied Sciences undergraduate section.

Certificates in Criminology
General and Advanced
The certificates in Criminology provide an opportunity to acquire an understanding of the complexities of illegal behaviors, and society's reaction to these behaviors. The programs are designed for professionals in sectors of the Criminal Justice system who are unable to attend university on a regular basis; but they are also open to other interested adults who meet the admission requirements. The programs are also designed specifically for distance education students. The curriculum integrates several...
disciplines (including Psychology, Sociology, Philosophy, and Political Science) with Criminology courses. For program requirements, see the School of Criminology in the Faculty of Arts undergraduate section.

Certificate in ESL Linguistics
This certificate prepares individuals to teach English as a second language. Although the certificate is not a specific employment credential, it constitutes preparation for advanced study in applied linguistics and ESL. When combined with appropriate professional certification, this program provides the specialized linguistic knowledge necessary to teach English language skills to those who are not native speakers of English. For program requirements, see the Department of Linguistics in the Faculty of Arts undergraduate section.

Certificate in Family Studies
The Certificate in Family Studies encourages and facilitates the study of families from an interdisciplinary perspective. This program helps students gain a comprehensive understanding of families through the perspectives of psychology, sociology, communication, health, and family processes. The program will be useful for childcare workers, social workers without professional degrees, courts workers, probation officers, police personnel, community mental health workers, street workers, psychiatric and public health nurses, those working in family-oriented community organizations, and for students preparing for careers which involve considerable work with families. For program requirements, see the Family Studies Certificate Program in the Faculty of Arts undergraduate section.

Certificate in First Nations Language Proficiency
This certificate program is intended for students who wish to acquire conversational and literacy skills in a particular First Nations language for purposes of teaching this language in elementary or secondary schools or to enhance their knowledge of a First Nations language for cultural reasons or professional objectives. For program requirements, see the Department of Linguistics in the Faculty of Arts undergraduate section.

Certificate in French Canadian Studies
This certificate offers recognition and encouragement to students who take a group of courses which together provide a broad understanding of the position of French Canadian communities across Canada and an insight into their cultural heritage. The program serves equally regular students pursuing a full-time degree program, and part-time students who may be working toward a degree or who may be taking courses for reasons of educational enrichment. For program requirements, see the Centre for Canadian Studies in the Faculty of Arts undergraduate section.

Certificate in French Language Proficiency
The certificate is for those who wish to enhance their knowledge of French for cultural reasons or professional needs, and for those who wish to improve their oral and written skills. It is also designed for those who require certification of their proficiency in French for employment purposes. For program requirements, see the Department of French in the Faculty of Arts undergraduate section.

Certificate in Health and Fitness Studies
This program provides adults with the opportunity to complete a coordinated and coherent program of study on a full- or part-time basis in the areas of health, physical fitness, and nutrition. The program provides basic familiarity with the functioning of the healthy human body at rest and during physical exertion. The program will be useful to those supervising training programs at YM/YWCA's, health spas, etc., or to uncertified sports coaches, as well as to the general public. For program requirements, see the School of Kinesiology in the Faculty of Applied Sciences undergraduate section.

Certificate in Liberal Arts
The Certificate in Liberal Arts provides students with a broad exposure to areas of knowledge and methods of inquiry essential to a liberal education. Available to all undergraduate students who desire a program structured for breadth of learning, it may be taken in conjunction with a degree program, or by students not currently seeking a degree. Students planning to obtain a B.A. within the Faculty of Arts may choose to complete the certificate in such a way that most or all of the Faculty of Arts breadth requirements are fulfilled by the same courses. For program requirements, see the Faculty of Arts undergraduate section.

Certificate in Literacy Instruction
The Certificate in Literacy Instruction prepares individuals to teach the skills of literacy to adult learners. By combining courses from a number of different disciplines with opportunities for guided practice, the program provides historical and contextual
perspectives on literacy, acquaints students with current practices in the field, and develops practical skills. For program requirements, see the Faculty of Education undergraduate section.

Certificate in Native Studies Research
The Certificate in Native Studies Research provides students with a unique opportunity to explore the history and prehistory, culture, language, and contemporary situation of Canadian native peoples, and to acquire basic skills in researching native issues. Particular emphasis is placed on the study of native people in the interior of British Columbia. This program is offered through Simon Fraser University in affiliation with the Secwepemc Cultural Education Society Program in Kamloops. All components of the program can be taken at the SECS Centre on the Kamloops (Shuswap) Indian Reserve. The program is also open to non-native students. For program requirements, see the Faculty of Arts undergraduate section.

Certificate in Public History
The field of public history is an established one where scholarly, professional, applied, and avocational activities flourish. The public historian usually practices outside the traditional academic setting - in museums, archives, government agencies, cultural societies, conservation authorities, private and public businesses and institutions. The certificate program is directed toward people working in the field who may not have a university degree or may have one in another discipline. For program requirements, see the Department of History in the Faculty of Arts undergraduate section.

Certificate for Senior Citizens
This program provides members of the senior citizen population (those aged 60 years and over) with opportunities to participate in University life, to undertake a program of study which is relevant to their life goals, and to gain recognition for their academic achievements. The program is advised by a steering committee. Recommendations for the award of the certificate are made through this committee. For program requirements, see the Certificate Program for Senior Citizens in the Faculty of Arts undergraduate section.

Certificate in Spanish Language Proficiency
The Certificate in Spanish Language Proficiency is intended for those who wish to enhance their knowledge of Spanish for cultural reasons or professional needs, and for those who wish to improve their oral and written skills. It is also designed for those who require certification of their proficiency in Spanish for employment purposes. For program requirements, see the Department of Spanish and Latin American Studies in the Faculty of Arts undergraduate section.

Certificate in Spatial Information Systems
This certificate is aimed at those who wish to develop an understanding of the underlying principles of spatial information systems, as a preparation for applying SIS in research or employment. For program requirements, see the Department of Geography in the Faculty of Arts undergraduate section.

Certificate in Urban Studies
The Certificate in Urban Studies encourages and facilitates the study of the contemporary city from an interdisciplinary perspective. The program helps students gain a comprehensive understanding, in theoretical and descriptive terms, of the nature and functions of cities in contemporary society from the perspectives of geography, political science, and sociology and anthropology. This program is suitable for those students contemplating careers in urban planning, consulting, and/or those who wish to participate in the Faculty of Arts Co-operative Education program. For program requirements, see the Department of Geography in the Faculty of Arts undergraduate section.

Certificate in Women's Studies
Combining academic training in Women's Studies with practical training in community work on behalf of women, this certificate is for those wanting to become involved, as well as for those already involved, in promoting the well-being of women in the community. The program can be taken on a full or part-time basis; day and evening courses are offered. For program requirements, see the Department of Women's Studies in the Faculty of Arts undergraduate section.

Professional Programs for Teachers
Credit courses in Education are offered during the late afternoon and evening during Fall, Spring and Summer semesters and in the evening from May to June (Intersession) and during the day and evening from July to August (Summer Session). More information about this program is available from the Education advisor, telephone 778.782.3488.
**Graduate Degree Programs**
The University offers graduate degree programs through evening study in Arts (Graduate Liberal Studies Program), Business Administration, Economics, Education, English, and Resource and Environmental Management. For program information consult appropriate sections.

**Knowledge Network Programs**
The University telecasts a variety of educational programs on the public television channel of the Knowledge Network. Each semester programming is offered in support of on-campus and distance education courses, in-service for teachers throughout the province, professional and personal development as well as for general viewing. Detailed information on individual programs produced and telecast by the University are available from the Centre for Distance Education, Continuing Studies, telephone 778.782.4566.

**Continuing Professional and Liberal Studies**
The Faculties, Schools and departments of Simon Fraser University offer community oriented credit free university programs to meet specific needs for professional updating and liberal education. These short courses, seminars, workshops, special lectures, symposia and conferences are offered in downtown Vancouver at Simon Fraser University at Harbour Centre, as well as at the Burnaby campus. Activities are currently concentrated in the areas of:

- Applied Sciences programs
- Arts, design and non-profit sector programs
- Business and professional programs
- Business writing programs (including technical writing, and corporate strategic communications)
- Conference Services
- Executive and management development programs
- Fellows' and Professional Certification programs and courses (Association of Administrative Assistants, Canadian Direct Marketing Association, Credit Union Institute of Canada, Risk and Insurance Management Society, Institute of Canadian Bankers, Insurance Institute of Canada, Canadian Institute of Travel Counsellors, Canadian Institute of Management, Trust Companies Institute, International Foundation of Employee Benefit Plans, Purchasing Management Association of Canada, Project Management Institute)
- Labour programs
- Liberal arts programs
- The Northern Justice Society programs
- Professional (Creative) writing programs
- Public policy programs
- Publishing programs
- Tourism programs
- Urban studies programs

The University awards certificates for completion of programs of credit-free study which have been approved by Senate and meet specific criteria, including a minimum 120 contact hours and formal evaluation of students.

Many programs and courses are of interest to students as well as adults in the community. For further information and publications describing these programs, telephone 778.782.4565, or Simon Fraser University at Harbour Centre, 778.782.5100.

**Special Audit Student**
The category of special audit student enables members of the community to access University credit courses as auditors. People interested in taking regular courses but who do not meet the general admission requirements or do not desire admission to the University may apply as special audit students. Such students attend courses but do not write final examinations or receive degree credit, record of attendance, or statement of standing.

Continuing Studies distributes a form which must be signed by the course instructor. Special audit fees (payable at the Cashier's Office) are calculated at one-half the normal course fee. Special audit students may not change registration status after the semester has commenced.
Co-operative Education

Director
Ms. D. Godwin 778.782.3836, 3038 Academic Quadrangle
778.782.4929 Fax

Co-ordinator Special Projects
Ms. D. Kloeble 778.782.5713, 9995 Applied Sciences Building

Arts Program
2100 East Academic Annex 778.782.5875 Fax
Ms. P. Johnston 778.782.3809
Ms. J. Horne 778.782.3041
Ms. J. Chacko 778.782.5751

Business Administration Program
5128 Academic Quadrangle 778.782.5922 Fax
Ms. J. Martin 778.782.4075
Ms. M. Klemetski 778.782.4993

Chartered Accountancy Program
5134 Academic Quadrangle 778.782.5922 Fax
Mr. J. Hsieh 778.782.4075

Communication Program
6155 Classroom Complex 778.782.4024 Fax
Ms. D. Sedo 778.782.3862

Computing and Mathematics Sciences Program
778.782.3045 Fax
Ms. K. Baxter 778.782.4123

10507 Teaching and Learning Complex
Ms. D. Godwin 778.782.3836, 3038 Academic Quadrangle
Ms. C. Vetterli 778.782.3239, 9997 Applied Sciences Building

Engineering Science Program
9827 Applied Sciences Building 778.782.4951 Fax
Ms. H. Matsui 778.782.4247
Ms. C. Forget 778.782.5806

Kinesiology Program
K9620 Shrum Science Centre 778.782.3040 Fax
Ms. N. Johnston 778.782.4541

Resource and Environmental Management Program
9675 Shrum Classroom Building 778.782.4968 Fax
Mr. P. Williams 778.782.3066

Science Program
5003 Academic Quadrangle 778.782.3031 Fax
Ms. C. Horvath 778.782.3270
Dr. A. Toby 778.782.5934
Ms. A. Rahme 778.782.3754

Co-operative Education integrates work experience and academic studies. The name reflects the co-operative relationship between the University, employer and student. Practical experience from work terms is related to the student's major interests within the fields of study.

A work term is paid, full-time work of four months (one term). The salary earned helps students finance their education and the experience helps validate career choices. The program tests the student's skills and knowledge learned in the classroom, and provides adjustment and experience in the work world.

Admission to the Program
Interested students should attend information meetings held the first and/or second week of classes, and should contact appropriate co-ordinators early (no later than one semester prior to the first work term). Transfer students complete a study semester before a work term. Four work terms (five for the CA program) must be successfully completed. Students transferring from an approved Co-op program elsewhere, who have successfully completed a first, or a first and second work term, may be exempt from the first work term.

Co-operative Education is mandatory for Engineering Science and optional for other programs. Entry is based on academic performance, Stepping Out program completion, and satisfactory entry interviews where motivation, interpersonal and communication skills are evaluated. Students must normally have 30-60 credit hours and a CGPA of at least 2.5 to enter and continue in a Co-operative program. Some departments have additional requirements.

Normally, only Canadian citizens and permanent residents are eligible to enter Co-operative Education programs.

The work-study chart shows a possible work term and study semester pattern. The alternating sequence, beginning before year three, provides the best learning structure. Other combinations can meet student and employer needs, as long as employer needs for students in the Fall and Spring terms are met.
Stepping Out
This eight week course, offered in Spring and Fall semesters, prepares students for workplace terms and covers resume writing, interview skills, workplace communication and behavior, business writing, presentation skills, and business ethics. Contact Co-operative Education for further information.

Operation of the Program
The Co-op co-ordinators negotiate work terms, meet employers to establish employer needs and also meet with students to establish objectives. They oversee job competition and visit students on the job, counsel students and deal with special problems which may arise.

Job Competition
Students and employers choose each other for work terms. Initially, employers indicate the number and type of student required and provide job descriptions. Prior to interviews, normally held on campus eight to twelve weeks before the work term, job descriptions, provided by employers, are displayed. Students apply for interview appointments, selecting opportunities that offer the experience they seek. The interview system provides maximum freedom of selection to both employers and students.

Applicants' resumes and transcripts are sent to employers who may then interview all applicants or a selection of them. Afterwards, employers prepare a list, in order of preference, of students who are acceptable. At the end of the interview period, students also state their employer preferences. These two choice sets are combined to effect the best match of employers and students.

The University then contacts employers and students, informing them of possible matches. Some students may not secure a job and some employers may not obtain students. In such cases, the University makes every effort to place these students and to satisfy the employers where the best interests of each can be served. Once a match is made, the student is committed to the acceptance of employment and must register for the appropriate university course using the regular registration procedure.

Application form submission and/or participation in the job competition indicates a commitment to the program and acceptance of the following:

- permission for release to prospective employers of copies of their transcript and previous employer evaluations
- acceptance of the job match
- agreement to register in the appropriate Co-operative Education course
- agreement to inform Simon Fraser University of the acceptance of any Co-operative Education employment position obtained outside of the match
- agreement to complete four (five for chartered accountancy) Co-op Education work terms

Co-op Japan Program
The co-op Japan Program is a national, multi-university program established in May 1991 under the auspices of the Federal Government's Pacific 2000 Japan Science and Technology Fund. The Program provides senior science and engineering students from across Canada with the opportunity to gain valuable work experience in Japan. The goal of the program is to develop a pool of young Canadian engineers and scientists with hands-on experience in Japanese industrial engineering and research practices.

Program Prerequisites

- third or fourth year student currently enrolled full time in the School of Engineering Science or the Faculty of Science
- CGPA of 3.33 (B+)
- minimum of one Japanese language credit course or two non-credit courses, or equivalent experience, and completion of a four week immersion Japanese language and culture program sponsored by the Co-op Japan Program
- time commitment is 8-12 months
- minimum eligible age 19 years
- Canadian citizen or permanent resident of Canada
- English language fluency
Application Submission Deadlines
Application deadline: September 30, 1995 or January 31, 1996
Student notification: January 1996, May 1996
Language training: May 1996, September 1996
Work placement begins: June 1996, October 1996

Student information packages are available from the Co-operative Education Office, AQ 3038. For further information, please call the Co-op Office at 778.782.3255.

Graduate Studies

General Regulations

Fees

Financial Aid

Faculty of Applied Science
Communication, Computing Science, Engineering Science,
Kinesiology, Resource and Environmental Management

Faculty of Arts
Archaeology, Contemporary Arts, Criminology, Economics,
English, French, Geography, History, Linguistics, Liberal
Studies, Philosophy, Political Science, Psychology, Sociology
and Anthropology, Spanish and Latin American Studies, and
Women's Studies.

Faculty of Business Administration

Faculty of Education

Faculty of Science
Applied and Computational Mathematics, Aquaculture,
Biological Sciences, Chemistry, Earth Science, Geography,
Mathematics and Statistics, Pest Management, Physics, and
Statistics.

More information
Also available is information on our graduate studies program,
and information about Graduate and Postdoctoral Scholarships
and Awards.

Graduate General Regulations

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.

Assistant Director - Graduate Studies
The Assistant Director - Graduate Studies is responsible for registration of students, assessment of fees, maintenance of records, and other administrative duties.

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
The student's Supervisory Committee is composed of two or more persons who help the student define a program of studies and report 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 Faculty of 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 PhD 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 at Simon Fraser University. 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 Assistant Director-Graduate Studies and the Dean of Graduate Studies. They and the Chairs of Graduate Program Committees are available to students for consultation.

**1.3 Admission**

**1.3.1 General**

A student may seek admission to either a Masters or Doctoral program. A student who is not qualified to enter a Masters or a Doctoral program may seek admission to the University as a Qualifying Student under the provisions of paragraph 1.3.5.

Before applying for admission, the student should write to the Chair of the Graduate Program Committee in the appropriate department to enquire about special admission requirements for the program.

**1.3.2 Admission to a Masters Program**

The minimum University requirements for admission to a Masters program are as follows.

a) a Bachelors degree with a cumulative grade point average (CGPA) of at least 3.0 from a recognized university, or the equivalent;

b) submitted evidence, usually in the form of 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) above but with professional experience of significance to the proposed area of research.

In addition, the student 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 command of English. (See also 1.3.11.)

**1.3.3 Admission to a Doctoral Program**

The minimum University requirements for admission to a Doctoral program are as follows.

a) either

i. a Masters degree from a recognized university, or the equivalent, or

ii. a Bachelors degree, with a cumulative grade point average of at least 3.5, from a recognized university, or the equivalent, or

iii. at least two semesters in a Masters program at this University with a cumulative grade point average of 3.5 in 75% of the graduate course work required for the degree. All graduate courses for the Masters degree, whether taken at this University or another university, shall be considered in the calculation.
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 Masters thesis or other scholarly work.

In addition, the student 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 command of English. (See also 1.3.11.)

1.3.4 Admission Under Special Arrangements
Exceptionally able applicants, who wish to work for a Masters 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 which can be shown to have internal coherence and academic merit, and in which the University has appropriate expertise and interests 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 students applying or working under Special Arrangements. Enquiries about these regulations should be directed to the Dean of Graduate Studies by January 1st of each year for admission to the Fall semester.

Students working under Special Arrangements may be required to take a selection of courses from existing programs. Other courses open to Special Arrangements students are:

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
Special Arrangements Masters and Doctoral thesis work are assigned the following numbers:
SAR 898 Masters Thesis
SAR 899 PhD Thesis

1.3.5 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 Masters or a Doctoral program can be met through the satisfactory completion of no more than 30 semester hours of specified courses. A Qualifying Student who has completed the make-up work may then apply under 1.3.2 or 1.3.3 for admission to a Masters or Doctoral program.

The minimum University requirements for admission as a Qualifying Student are as follows.

a) a Bachelors degree, or the equivalent
b) submitted evidence of academic ability, usually in the form of references from qualified referees

1.3.6 Admission as a Special Student
Normally, a Special Student at the graduate level is a person who has at least a Bachelors degree, or the equivalent, who wishes to take specified courses but is not seeking a degree from this University. Permission is required from the instructor in each course.

No credit will be given towards any degree offered by the University for courses taken as a Special Student except, under unusual circumstances, on petition to the Senate Graduate Studies Committee. Application may be through the Graduate Program Committee in the department in which the student wishes to work or through the Dean of Graduate Studies. 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.

1.3.7 Conditional Admission
A student who wishes to apply in any of the above categories can be given conditional admission before all the conditions for admission have been met. In that case, the student is admitted conditionally upon fulfilling certain specified requirements.

1.3.8 Admission as an Exchange Student
Bona fide graduate students at other universities who wish to take courses at Simon Fraser University, not leading to a degree at this University, will be admitted 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.

1.3.9 Application for Admission
Application forms may be obtained from the Office of the Registrar or from any Graduate Program Committee. The completed forms should be returned to the department in which the student wishes to enroll at least three months before the semester in which the student wishes to register. However, students are advised to check with the appropriate department as to the prevailing application deadlines for the graduate program in which they are interested.

Admission of Masters or Doctoral students is by resolution of the Senate Graduate Studies Committee or, for students entering under Special Arrangements, on the recommendation of the Senate Graduate Studies Committee.

Decisions on admissions made by the Senate Graduate Studies Committee shall be final. Final approval of admission for Special Students or Exchange Graduate Students is by the Dean of Graduate Studies provided that all the conditions of such admission have been met.

1.3.10 Application to Take a Second Masters or Doctoral Degree
Students who have a Masters or a Doctoral degree can apply to take a second Masters or Doctoral degree under the following constraints.

a) no course work taken 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.

1.3.11 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) combined with the Test of Written English (TWE) are acceptable for this purpose. The IELTS (International English Language Testing System) is also acceptable. The minimum University requirements for scores on these tests is TOEFL = 570, TWE = 5 and IELTS = overall band score of 7.5; 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 of Admissions
Office of the Registrar
Simon Fraser University
1.4 Registration

1.4.1 Date of Entry
University regulations permit graduate students to enter programs at the beginning of any semester. However, some programs require students to start in a specific semester.

1.4.2 Registration
Registration occurs in the month preceding the start of each semester and must be completed by the Friday preceding the start of classes; the academic calendar of events is contained in the Simon Fraser University Calendar. New students are allowed an additional two weeks to finalize their registration, without financial penalty. The course or research-related work for which the student registers 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, Registration for courses taken outside the student's department must have the approval of the course instructor. Students going on leave are required to register (see 1.8.4).

1.4.3 Registration in Discontinuous Programs
Students who are enrolled in programs which are designed to be discontinuous are not required to go on leave during the semester or sessions in which the program does not run, nor to register during those semesters. However, if they have to miss one or more of the semesters in the design of their programs, the normal leave regulations apply (see 1.8.4).

1.4.4 Continuity of Registration
With the exception of students in discontinuous programs, all students are required to register in every semester from admission until all requirements for the degree have been fulfilled. This includes students registered on leave. A student who does not register is considered to have withdrawn from the University. (See 1.8.4 for regulations on student leave.)

1.4.5 Part-time Study
A number of graduate programs have been approved, by the relevant Graduate Program Committee, for part-time study. These are listed below.

- Archaeology (MA; PhD)
- Biological Sciences (MPM; MAq)
- Business Administration (Executive MBA)
- Communication (MA; PhD)
- Economics (MA; PhD)
- Education (MA; MSc; MEd)
- Engineering Science (MEng)
- English (MA; PhD)
- French (MA)
- Liberal Studies (MA)
- Mathematics and Statistics (MSc, PhD)
- Political Science (MA)
- Resource and Environment Management (MRM)
- Spanish and Latin American Studies (MA)
- Special Arrangements (MA; PhD)
- Women's Studies (MA)

The list of approved programs is subject to change.

A student in a graduate program may enroll part-time in a particular semester if all the following requirements are satisfied in that semester:

a) that program has been approved for part-time study, and
b) the student enrolls in one course only, and
c) the student is not working on his or her thesis, project, or extended essays, and
d) the student will spend no more than 50% of his or her productive time on his or her graduate studies.
The application to enroll part-time is subject to the approval of the student's Supervisory Committee and Graduate Program Committee.

A part-time enrollment is considered to be the equivalent of one-half a full-time equivalent (FTE) enrollment. The time limit for degree completion may reflect part-time status; (see 1.12.)

1.5 Academic Standing

1.5.1 Normal Grading System
Normally, for grading at the graduate level in the University, the following grades are used.

A = 4.00 points  
A- = 3.67 points  
B+ = 3.33 points  
B = 3.00 points  
B- = 2.67 points  
C = 2.00 points  
F = 0 points

A student must maintain a cumulative grade point average (CGPA) of 3.0. The CGPA is the cumulative average of the grade points earned in the Simon Fraser University graduate courses taken towards a Masters or Doctoral degree.

When a student is working on a thesis, extended essay or project as part of the requirements for the degree, the notation of IP (in progress) shall be entered on the transcript. The IP notation 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. This shall be entered as DE in the student's record. If the grade is not received by the Assistant Director - Graduate Studies by the last day for submitting grades in the next semester, the DE grade will automatically be converted to an F. When the grade for a course is not deferred and no grade is received by the Assistant Director - Graduate Studies, the notation N will be placed in the student's record. For the purposes of calculating the CGPA, N counts for 0 points.

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 semester grade point average or cumulative grade point average.

1.5.3 Satisfactory/Unsatisfactory Grading (S/U)
A department, recommending through the standard channels to Senate, with Senate approval, may require that a designated course be graded satisfactory/unsatisfactory (S/U) for all students in the course.

An individual student may request to take 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 concerned must also be obtained.

Having registered 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 taken 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 graduate student is required to maintain a CGPA of at least 3.0. Failure to do so 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.
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 semesters (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 semester hours credit for both iterations of the course are used for the calculation of the CGPA and towards the semester hours 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 semester hours credit for the course are used only once towards the requirements for the degree.

A student must indicate at the time of registration 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.

1.6 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.

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
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 third semester of full-time equivalent enrollment after the student's admission, although in certain circumstances, and with the permission of the Dean of Graduate Studies, the appointment can be made later. 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.

A Senior Supervisor who is planning to be off campus for any length of time 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.

1.6.4 Supervisory Committee
For students in degree programs in which a thesis, project or extended essays is required, a supervisory committee, constituted as described below, must be established. For students in other programs, the senior supervisor alone comprises the supervisory committee.

In consultation with the student, the Senior Supervisor shall recommend the composition of the Supervisory Committee. The committee consists of the Senior Supervisor and, in most cases, at least one other faculty member. For degrees designated by Senate as professional degrees, the other member(s) of the committee may be other suitably qualified person(s). This recommendation shall be made during the same semester in which the Senior Supervisor is appointed. 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 reporting on the progress of the student's work. The Committee shall be available for consultation.

1.6.5 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, any member of the Supervisory Committee or any member of the Graduate Program 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.

1.6.6 Human Subjects Ethics Review
All research involving human subjects must be directed for review and approval, to the University Ethics Review Committee. Copies of the policy (R20.01), procedures and forms for this review may be obtained from the department or the Dean of Graduate Studies.

1.7 Residence and Course Requirements

Masters Students

1.7.1 Residence Requirement for the Masters Degree
The aim of the residence requirement is that the student spend a period of time in contact with faculty members and with other students. To this end, the student shall be registered in a Masters program at the University for a minimum of three full time equivalent semesters. Semesters of part time registration will be counted as one half of a full time semester; on leave semesters will not count toward this minimum. No part of the minimum may be waived for work performed before admission to the University as a Masters students.

1.7.2 Course Requirements for the Masters Degree
Masters candidates must complete the University minimum requirement of 30 semester hours work in one of the following ways.

   a) successfully complete a minimum of 12 semester hours of graduate course work and submit an original thesis
   b) successfully complete a minimum of 20 semester hours of graduate course work and submit at least two extended essays, or a project
   c) successfully complete a minimum of 30 semester hours of graduate course work and pass a final examination

Depending on the requirements of the program, all three alternatives may not be available. 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.

The following constraints apply to the minimum course work requirement.

One-half of the minimum course work of the departmental degree requirements must be taken at this University.

On the recommendation of the Graduate Program Committee and approval of the Senate Graduate Studies Committee, up to one half of the departmental minimum may be transfer credit from another institution.

None of the University minimum may be taken on an S/U basis.

None of the University minimum may be courses taken in order to qualify for admission.

None of the University minimum may be undergraduate courses.

A graduate student may apply to take one or more courses at another university for credit towards a degree at Simon Fraser University. 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 Senate Graduate Studies Committee for final approval. No more than one half of the minimum course work requirement for the Masters degree may be taken at another university. While taking a course/courses at another university under these provisions, the student shall maintain normal registration at this University, not registration on leave.

**Doctoral Students**

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. To this end, the student shall be registered in a Doctoral program at the University for a minimum period as follows.

- Doctoral students entering the program with a Masters degree shall be in residence for five full time equivalent semesters.
- Doctoral students entering the program with a Bachelors degree shall be in residence for eight full time equivalent semesters.
- Students who have transferred to the Doctoral program from the Masters degree program at Simon Fraser University without completing the Masters degree, shall be in residence for a total of eight full-time equivalent semesters, at least five of which must be in a Doctoral program.

Semesters of part time registration will be counted as one half of a full time semester; on leave semesters will not count toward this minimum. No part of the minimum may be waived for work performed before admission to the University as a Masters of Doctoral student.

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 take specified courses or semester hours as part of the degree program.

1.7.5 Doctoral Thesis

All Doctoral programs require a Doctoral thesis based on substantial original research.

1.8 Progress, Withdrawal and Leave

**Masters and Doctoral Students**

1.8.1 Progress Evaluation

At least once each year, the Supervisory Committee will report on the student's progress. This report will be sent, in writing, to the Graduate Program Committee with a copy to the student.

1.8.2 Procedure for 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. That Committee shall consider whether or not the student's progress has been satisfactory. Should the student's progress be found to be unsatisfactory, the 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 amount 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 Assistant Director - Graduate Studies. If required to improve within a specific amount 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 Assistant Director - Graduate Studies.
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, 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 semester.

Under extenuating circumstances, a student may withdraw from a course without academic penalty during the tenth to the twelfth week of classes. Such circumstances must be beyond the control of the student (e.g., medical or financial crisis); under such circumstances, therefore, 898 (Masters thesis research), 899 (PhD research) or a similar course may be added, as appropriate. The 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 his Graduate Program Committee and the Assistant Director - Graduate Studies.

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
One constituent of graduate work is that a considerable length of time is devoted to concentrated work in one particular area of research. It is therefore desirable that a graduate degree involve several consecutive semesters of uninterrupted research. However, a student may apply to go on leave under the following circumstances.

a) when a situation arises which makes it necessary or desirable to interrupt the work, and
b) when no substantial use will be made of University facilities.

Permission to register on leave must be approved by the student's Supervisory Committee and the Graduate Program Committee. Students on leave are required to register during the normal registration period for each semester by indicating on leave status on their current registration form. A student who does not register is considered to have withdrawn from the University.

1.9 Preparation for Examinations

Masters Students

1.9.1 Examining Committee for a Masters Degree Candidate
Each candidate for a Masters degree shall be examined on the thesis, extended essays or project. Each Examining Committee shall have the following minimum composition.

a) 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.
b) all members of the student's Supervisory Committee.
c) 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 students seeking a degree under Special Arrangements, this person shall be from outside the University.

1.9.2 Preparation for Examination of Masters Thesis
Preparation for the examination of a Masters thesis shall not take place until the thesis is substantially complete and in the format laid down in appendix A of the General Regulations - Graduate Studies.
At least six weeks before the proposed date for the thesis examination, the candidate's Supervisory Committee shall make a recommendation concerning the date of the thesis examination and the composition of the Examining Committee in conformity with 1.9.1. This recommendation, which shall include the thesis title and an abstract, shall be sent to the Graduate Program Committee for approval and to the Dean of Graduate Studies for final approval. The Examining Committee proposal shall reach the Dean of Graduate Studies Office at least one month before the examination date.

Unbound copies of the completed thesis shall be given to the Chair of the Examining Committee for distribution to that Committee, and one copy shall be made generally available for inspection by interested members of faculty and students. The completed thesis shall be distributed no later than two weeks before the examination date and the Chair of the Examining Committee shall inform the Dean of Graduate Studies in writing that this has been done.

At least ten days before the examination, the Chair of the Graduate Program Committee shall 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.

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:

a) 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.

b) all members of the student's Supervisory Committee

c) a member of faculty at the University or a person otherwise suitably qualified, who is not a member of the student's Supervisory Committee

d) 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 appendix A of the General Regulations - Graduate Studies.

At least two months before the proposed date for the thesis examination the candidate's Supervisory Committee shall make a recommendation concerning the composition of the Examining Committee (in conformity with 1.9.3) and the date of the thesis examination. This recommendation, which shall also include the thesis title, an abstract of the thesis, and a short biography of the proposed External Examiner, shall be sent to the Graduate Program Committee, then to the Faculty Graduate Studies Committee for approval, then to the Office of the Dean of Graduate Studies for consideration by the Senate Graduate Studies Committee. The recommendation must reach the Dean of Graduate Studies Office at least five weeks before the examination date. After the recommendation is approved, the Dean of Graduate Studies shall formally invite the External Examiner and provide information on the examination date and procedures.

Unbound copies of the completed thesis shall be given to the Chair of the Examining Committee for distribution to that Committee. A copy of the thesis shall also be made generally available for inspection by interested faculty members and students. The completed thesis shall be thus distributed no later than one month before the examination date and in no case prior to the approval of the Examining Committee by the Senate Graduate Studies Committee. The Chair of the Examining Committee shall inform the Dean of Graduate Studies in writing when the thesis has been distributed.

### 1.9.5 The Role of External Examiner

The External Examiner shall be chosen as 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 before the examination. The report, which should indicate whether the examiner believes the thesis is ready for defence, shall be distributed before the examination to the members of the Examining Committee. In cases when the examiner finds the thesis ready for defence, the report will be kept confidential until after the examination; in other cases, the report need not be kept confidential. Once the examination has taken place, 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 defense) 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 or not the thesis ought to pass, fail, or be subject to revision as under 1.10.2. This report shall be copied 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.

1.9.6 Notification of Doctoral Thesis Examination
At least ten 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

Masters and Doctoral Students

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.

1.10.2 Classification of the Thesis
There are four possible outcomes of the thesis defence.

a) The thesis may be passed as submitted.
b) The thesis may be passed on the condition that minor revisions be completed to the satisfaction of the Senior Supervisor.
c) 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.
d) 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 PhD candidates or candidates enrolled under Special Arrangements, the Committee may not pass a thesis or defer its judgement on a thesis without the concurrence 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 Registrar. A copy of the notification will be sent to the candidate. No degree will be approved by Senate until the Registrar has been so notified.

Masters Students

1.10.5 Examination of Extended Essays submitted in Partial Fulfillment of Degree Requirements
Examination for an extended essay shall be as for the examination of a Masters thesis. The extended essay of a successful candidate shall be deposited in the Library in the same format as for a thesis.

1.10.6 Examination of Projects Submitted in Partial Fulfillment of Degree Requirements
For degrees designated "professional degrees" by Senate (presently MBA, MEd, MPM, MRM, MEng) the project will be examined in ways 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 either 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.

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 Microfilming
Except as noted in 1.11.3, the student shall sign an agreement form authorizing the National Library to microfilm the thesis and to sell microfilm copies on request.

1.11.3 Postponement of Publication
The thesis may be withheld from circulation and from copying for a period of six months from the date of defence of the thesis, in order to protect patentable material, pending application, or where immediate commercial publication is in view. In unusual cases this period might be extended for a further six months. 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.
copy of the thesis shall not be sent to the National Library 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.

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 Masters Degree
A student shall complete all of the requirements for a Masters degree within twelve semesters of full-time equivalent (FTE) enrollment. In addition, all requirements of the Masters degree must be completed within six calendar years of initial enrollment as a Masters student.

1.12.2 Doctoral Degree
A student shall complete all the requirements for a Doctoral degree within eight calendar years of initial enrollment as a Doctoral student or, in the case of a student who has transferred from a Masters program into the Doctoral program without completing the Masters degree, within eight calendar years of initial enrollment as a Masters student.

1.12.3 Readmission
Under exceptional circumstances and with the recommendation of the Departmental Graduate Program Committee concerned, a student who did not complete the degree requirements within the maximum time, and who was thus required to withdraw, may be readmitted for one semester only to complete those requirements. Final approval for readmission is by the Dean of Graduate Studies.

1.13 Award of the Degree

1.13.1 Application for Graduation
Every candidate for a graduate degree is responsible for applying for graduation on forms available from the Office of the Registrar.

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 Registrar. Only individually signed copies with the University seal are valid. For further information on cost refer to fees section.

1.14 Convocation Ceremony
Convocation is held twice annually. Graduates from the previous Fall and Spring semesters convocate in early June, while graduates from the Summer semester 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

Grades
May be appealed to the instructor, Department Chair and, in some cases, Faculty Dean in accordance with Academic Policy T 20.01.
**Progress Evaluations**
May be appealed to the Senate Graduate Studies Committee (see 1.8.2.)

**Appeals**
May be initiated at the original level and, if not resolved, the appeal may proceed to other appropriate higher levels up to and including the Senate Graduate Studies Committee.

**Graduate Fees**
The Board of Governors reserves the right to change the schedule of fees without notice.

**Fees for New Masters and PhD Students**
This fee schedule applies to graduate students (except EMBA) registering in their programs for the first time on or after Fall Semester 1990.

- Full-time fee unit $768
  - Exception: off campus MEd program $1750
  - Executive MBA program (weeknight program) $3500
  - Executive MBA program (weekend program) $4430
  - MBA program (day program) $800
  - Master of Publishing Program $1200
- Part-time fee is equal to one-half of the full-time fee unit (see Graduate General Regulations 1.4.5.).
- The minimum fee for the Masters degree is set at six full-time fee units, unless the degree is completed in no more than twenty-four consecutive months of full-time enrollment in which case the student is liable only for the fee units payable until the date of completion of all degree requirements.
- The minimum fee for the Joint MRM/MBA degree is set at twelve full time fee units, unless the degree is completed in no more than 44 consecutive months of full time enrollment in which case the student is liable only for the fee units payable until the date of completion of all degree requirements.
- The continuing fee, equal to one half of the full time fee unit, is payable by students who have met the fee requirement above.
- The minimum fee for the Doctoral degree is set at eight full-time fee units, unless the degree is completed in no more than thirty-two consecutive months of full-time enrollment in which case the student is liable only for the fee units payable until the date of completion of all degree requirements.
- Students who transfer to another degree program, without completing the first, retain credit for fee units already paid.
- Registration in specific semesters in programs designated as discontinuous does not require payment of a fee. Those programs designated as discontinuous and affected semesters are:

<table>
<thead>
<tr>
<th>Program Semesters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive MBA, MALS First and second Summers</td>
</tr>
<tr>
<td>MEng Every Summer</td>
</tr>
<tr>
<td>MRM First and second Summers, only for students who have registered part-time exclusively.</td>
</tr>
</tbody>
</table>

- The continuing fee, equal to one-half the full-time fee unit, is payable by students who have met the fee requirement in c) and d), with the exception of students registered in the Executive MBA program for whom the continuing fee is $366.00.
- Students registered on a time extension beyond the maximum given in Graduate General Regulation 1.12 are required to pay a registration fee equal to one full-time fee unit for each such registration.
- Students registered for one semester to complete degree requirements as described in Graduate General Regulation 1.12.3 are required to pay a registration fee equal to one and a half full-time fee units.

**Fees for Continuing Masters and PhD Students**
This fee schedule applies to graduate students who registered in their programs for the first time prior to the Fall semester 1990.

Candidates for the Masters Degree and the Day MBA program
1st semester to 3rd semester inclusive $927
4th semester to 6th semester inclusive $670
7th and subsequent semesters $348
Candidates for the Executive MBA Program
(see Executive MBA below)

Candidates for the Master of Engineering degree program
Each semester (except summer semester) $ 573

Candidates with a Masters Degree entering the PhD program
1st semester to 3rd semester inclusive $ 927
4th semester to 6th semester inclusive $ 670
7th semester to 9th semester inclusive $ 436
10th and subsequent semesters $ 348

Candidates with a Bachelors Degree entering the PhD program
1st to 3rd semester inclusive $ 927
4th to 9th semester inclusive $ 670
10th and subsequent semesters $ 348

**Fees for Continuing Executive MBA Students**
This fee schedule applies to Executive Master of Business Administration students who registered for the first time prior to the Fall semester 1993.

Continuing Executive MBA Students
Weeknight Program $ 2200
Weekend Program $ 3355

**Fees for Special, Exchange, and Qualifying Students**
Tuition fee per credit hour $ 77

**Note:** No tuition fees will be charged an exchange student who is a bona fide graduate student paying regular fees at another Western Canadian university which extends a like privilege to graduate students registered at Simon Fraser University. However, these students may be charged the full Student Activity Fee.

**Other Fees**

* **Athletic-Recreation Fee**
  Per semester $ 30
  Except for: Students registered part-time $ 15
  Students registered on leave no fee

* **Student Activity Fee**
  Per semester $ 52
  Except for: Students taking courses for credit at designated off campus locations $ 26
  Students registered part-time $ 26
  Students registered on leave no fee

* **Student Services Fee**
  Per semester $ 18
  Except for: Students registered on leave no fee
  Students registered in the off campus MEd program no fee

* **Special Fees**
  Application fee $ 45
  On leave fee (see Graduate General Regulations 1.8.4) $ 154
  Late registration fee $ 50
  Time extension surcharge (for continuing students only) $ 696
Readmission fee (for continuing students only) $ 927
Reinstatement fee $ 100
Official transcript of academic record $ 2

Normally, students are required to submit the transcript fee before the transcript will be released. Only at the discretion of the Registrar will the student be billed for a transcript after its release. Replacement library card fee $ 5
Graduation fee $ 36

The non-refundable graduation fee is payable in six instalments of $6.00 in each of the student's first six semesters of registration in the graduate program.

Payment of Fees
Unless otherwise authorized, fees must be paid in full each semester at the time of registration. Credits for scholarships or bursaries will be given only on the authority of the Dean of Graduate Studies. A student applying for Canada Student Loans should try to make arrangements to pay fees from other sources, as loans cannot be authorized until the student is officially registered.

With regard to the British Columbia Student Assistance Program, students are reminded to register as full time students in order to qualify to receive funds in a given semester, to retain funds received in a given semester, and to be granted interest free status for a given semester.

Form of Payment
Fees may be paid by cheque, cash, or at any Bank of Montreal. Cheques should be made payable to Simon Fraser University. Students are cautioned not to mail cash.

Refunds
Withdrawal from Program
If a student withdraws from the graduate program before the end of the semester, refunds will be calculated from the date the student officially notifies the Registrar in writing of his/her withdrawal from the University. A 100% refund will be given in the first three weeks of classes and a 50% refund in the fourth week of classes. There is no refund for dropping a course. Fees and fee refunds for Qualifying and Special Students are in accordance with the Undergraduate Fee Schedule. Students whose registration status changed during a semester as a result of factors beyond their control and within the first four weeks of classes, may be eligible for partial refund of the applicable fees and should consult the Office of the Registrar for further information.

The on-leave fee may be waived in exceptional circumstances, for example, from accident, illness or parenting, on the basis of medical documentation.

Fees for Courses at Another Institution
A student registered at Simon Fraser University who takes a course at another institution of higher learning and has had this course approved in advance for credit towards the graduate program (see General Regulations) is responsible for enrolling at the other institution and paying fees assessed by that institution. When the student produces satisfactory evidence of tuition fee payment at the other institution, the SFU fees for that semester will be decreased by this amount.

Financial Aid

Financial Aid For Graduate Students
Financial aid is available from government and other granting bodies and from awards within the University which are administered by the Office of the Dean of Graduate Studies. Information on awards listed below is available from:

Location: Dean of Graduate Studies Office, 6046 Academic Quadrangle
Telephone: 291-4255
Teaching Assistantships (TA's) and Research Assistantships (RA's) are available in most departments. Applications should be directed to the Chair of the appropriate Graduate Program Committee.

The Financial Aid and Awards Office administers all student loan applications and awards based on financial need. These include the Canada Student Loan Program, the Work-Study program and Graduate Bursaries. For further information, contact the Financial Assistance and Awards Office, 3017 Academic Quadrangle, (604) 294-8600.

Plan and apply well in advance as many scholarship deadlines occur up to 12 months before the granting of the award. Application deadlines are listed for some of the following awards. Please note that these are approximate dates only, and are subject to change by the awarding agency.

International Students - students who are not Canadian citizens and who would require financial assistance to attend Simon Fraser University must seek such assistance in their country of origin before arrival in Canada. Many of the outside awards are restricted to Canadian citizens or permanent residents. However, foreign students are eligible for most awards granted by the University.

Categories of Graduate Awards, Bursaries and Stipends
Scholarships and Fellowships Awarded by the University
Scholarships and Awards Administered by the University
Scholarships and Fellowships Administered by Federal Government Agencies 260
Awards Administered by the International Council for Canadian Studies 260
Scholarships and Fellowships Administered by Other Institutions and Associations
Bursaries and Loan
Student Employment: Work-Study Program

The following information is intended as a guide only. Further information may be found in the Graduate Awards Guide which is available for loan in the reserve section of the W.A.C. Bennett Library. 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 giving prior notice.

Scholarships and Fellowships Awarded by the University
Detailed information on these awards is available from the Dean of Graduate Studies. Completed application forms should be submitted to the applicant's department by the indicated deadlines.

Entrance Scholarships
Bert Henry Memorial Graduate Scholarship
The recipient is a student who has received the Masters degree and is entering any PhD program at Simon Fraser University. The recipient must show high academic performance and potential for significant contribution to the chosen field of study. One award valued at $18,000 per annum is made each year. Tenure is one year and may commence in any semester. Application deadline: March 15.

Simons Foundation Doctoral Entrance Fellowship (for Women)
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. One award valued at $15,000 per annum is made each year. Tenure is one year and may commence in any semester. Application deadline: March 15.

C.D. Nelson Memorial Graduate Scholarships
Recipients are outstanding scholars entering any Simon Fraser University graduate program. Twelve or more awards valued at $16,000 per annum are made each year. Tenure is one year and may commence in any semester. The recipient must normally be registered full-time throughout the period of the award. Application deadline is March 15.
Scott Paper Limited Bicultural Graduate Entrance Fellowship
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 valued at $15,000 per annum is made each year. Tenure is one year and may commence in any semester. Application deadline: March 15.

Awards for New or Continuing Students

Graduate Fellowships
Recipients are full-time students in any Simon Fraser University graduate program. Awards are made on the basis of academic merit; the normal minimum criterion for eligibility is a CGPA of 3.5. These are one-semester awards valued at $4,200 (Masters) or $4,800 (PhD). Students may apply in an annual competition for Graduate Fellowships tenable in one, two or three semesters. Application deadline is April 15.

Awards for Continuing Students

William and Ada Isabelle Steel Memorial Graduate Scholarship
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 valued at $17,000 per annum (of which $2,000 is for travel, accommodation and related research expenses) is made each year. Tenure is one year and may commence in any semester. During tenure of the award, the recipient may hold the equivalent of a 5 base-unit teaching assistantship or a research assistantship in one semester. Application deadline is March 15.

President's PhD Research Stipends
These are one semester awards available to all full-time PhD students who have completed all degree requirements with the exception of the thesis. Students may receive the stipend once. The value is $4,800. Application deadlines are the end of the second month of the semester preceding the semester of tenure.

Scholarships and Awards Administered by the University

Special Awards

Governor-General's Gold Medal
A Gold Medal, presented by His Excellency, the Governor-General of Canada, will be awarded to the graduate student who achieves the highest academic standing in his/her Masters or doctoral degree program.

Deans' Convocation Medals
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 for the 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 by April 30.

Private Awards

The following awards are contingent upon the availability of funds.

J. Abbott/M. Fretwell Graduate Fellowship in Fisheries Biology
One fellowship of $3,000 awarded annually 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 Abbot and Michael Fretwell after their death in a tragic helicopter accident in September 1988. Application deadline: September 30.

Alan Boag Scholarship
This scholarship, valued at $2,000 is the gift of the trustees of a fund established by the late Alan Boag. It is available to students in Business Administration, Economics, History, Political Science, Sociology and Anthropology who have completed four semesters of full time study at Simon Fraser University.
Applicants must submit an essay on some aspect of socialism which shows originality in analysis and treatment of the area. Students are advised to consult with faculty regarding the suitability of the proposed essay subject. No award will be made if, in the opinion of the referees, a suitably high standard has not been reached.

Applicants should submit three copies of the essay to the department of enrollment. The award will normally be made in the following Spring semester. Application deadline: September 30.

Archaeometry Prize
A prize valued at approximately $300 (depending on interest accrued) will be awarded annually in the Spring semester. 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. Nomination deadline: January 30.

Arthur Anderson & Company Graduate Entrance Scholarship
One scholarship of $4,400 awarded annually to a student planning to enter a graduate program in the field of accounting. Application deadline: September 30.

M.D. Angus & Associates Graduate Fellowship in Psychology
One award valued at approximately $200 to assist a graduate student in Psychology with the development of a publishable standardized test. Application deadline: September 30.

Wm. F. and Ruth Baldwin Graduate Scholarship in History
One scholarship valued at approximately $4,000 is awarded to a student pursuing a graduate degree in British history at the Masters level. Application deadline: January 30.

Margaret Lowe Benston Memorial Graduate Bursary in Women's Studies
One or more bursaries valued at approximately $650 each for graduate students in Women's Studies. Preference will be given to students working in areas relating to women in science and technology. Application deadline: May 30.

BCAA Environmental Studies Award
One award of approximately $1,100 to recognize outstanding academic performance by a graduate student whose thesis research is related to the study of the environment. Application deadline: September 30.

BC Council of Garden Clubs
A scholarship of $750 will be awarded annually to a student in the Master of Pest Management Program whose course of studies emphasizes horticultural pest control. The recipient must be a Canadian citizen. A letter of recommendation should accompany the application. Application deadline: September 30.

BC Packers Limited Scholarship
A scholarship valued at $500 will be awarded to a graduate student working towards the degree of Master of Science or Doctor of Philosophy in some area of fish biology or aquatic ecology. The award will be made by the Senate Graduate Awards Adjudication Committee on the recommendation of the Department of Biological Sciences. Application deadline: September 30.

BC Ministry of Health: Alcohol and Drug Programs Fellowship
One award of $10,000 for a Masters student in Psychology whose research is in the area of substance abuse. Application deadline: May 30.

Boag Foundation Graduate Scholarship in Women's Studies
One award of $1,500 for a graduate student in Women's Studies. Application deadline: May 30.

B.P. Beirne Prize in Pest Management
An annual prize, currently valued at $1,000 from an endowment with accompanying certificate will be awarded during May each year to the outstanding graduate from the Master of Pest Management Program in the three semesters immediately preceding Convocation. The award is in honor of Dr. B. P. Beirne, founder of the Centre for Pest Management at Simon Fraser University. It will be made by nomination by the Director of the Centre for Pest Management in consultation, as necessary, with faculty. The
candidate will be judged equally on his or her scholastic record, professional paper and relevant professional attributes. 
Nomination deadline: May 30.

CN - Terry Fox Research Fellowship in Kinesiology
CN has established a research fellowship to honor the dedication and courage of Terry Fox. An annual award of $2,500 will be available to a Simon Fraser University graduate student in Kinesiology for the purpose of research into occupational health, prosthesis and related subjects. The fellowship will be awarded by the Senate Graduate Awards Adjudication Committee on the basis of academic merit, the research proposal submitted and a recommendation of the student from the Department of Kinesiology. Application deadline: September 30.

Cable Television Pioneer Graduate Scholarship
One scholarship of approximately $700 for a graduate student in Communication specializing in communication policy. Application deadline: September 30.

Canron Limited - Sidney Hogg Memorial Graduate Scholarship
Canron Limited has established a scholarship in memory of the late Mr. Sidney Hogg, a Convocation founder of Simon Fraser University. This annual scholarship of approximately $630 will be awarded to a worthy and deserving student in post-graduate 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. Application deadline: September 30.

COGECO Graduate Scholarship in Communications
One award of approximately $11,000 for a graduate student in Communication. Application deadline: September 30.

Barry Clark Memorial Graduate Scholarship in Pre-Twentieth Century English Literature
One award of approximately $650 for a graduate student in English, specializing in pre-twentieth century English literature. Application deadline: September 30.

Samuel and Leatrice Cohen Prize in Environmental Physiology
One prize of approximately $900 to recognize the best student paper resulting from graduate research in the field of environmental physiology. Application deadline: September 30.

The Graduate Prize in Computing Science
One prize of approximately $300 is awarded annually to the top graduate student in Computing Science from the income earned from the Graduate Prize in Computing Science Endowment Fund. Nomination deadline: May 30.

Cook Conference Scholarship
A scholarship up to $1,500 will be awarded to a graduate student studying in any field of History. Tenure of this scholarship is for one semester and may be held during the summer semesters. Recipients of this scholarship must be registered during the tenure of the award. Recipients normally may not hold a non-academic salaried position nor a graduate stipend during tenure of the scholarship. The scholarship will be awarded by the Senate Graduate Awards Adjudication Committee on the basis of high academic performance. Application deadline: January 30.

Graduate Student Prize in Criminology
Two prizes awarded annually to the outstanding first year student in each of the School of Criminology's MA and PhD graduate programs. Application deadline: September 30.

Delcan Corporation Graduate Bursary
Two bursaries valued at approximately $1,000 each for graduate students in the Faculties of Science or Applied Science. Contact Financial Aid and Awards.
Gordon Diewert Graduate Scholarship in Kinesiology
A scholarship valued at $1,500 will be awarded annually to a graduate student on the basis of high academic performance and study in the area of motor learning in Kinesiology. This fund has been established in honor of Dr. Gordon Diewert for his contribution to Kinesiology at Simon Fraser University. Awards will be made on the basis of a recommendation by the Chair of Kinesiology to the Senate Graduate Awards Adjudication Committee. Application deadline: September 30.

Digman Bursary
Bursaries are available to graduate students in Physics. Students must demonstrate financial need and academic ability. Candidates are selected by the Chair of the Physics Department. Application deadline: September 30.

Distinctive Travel Service Inc. Graduate Scholarship in Education
One award valued at approximately $700 for a graduate student in the Faculty of Education. When possible, the scholarship should be granted to a graduate student with travel costs that are not funded from other sources involved in their research project. Application deadline: September 30.

Robert Hancock Dunham Memorial Scholarship in English
One award of approximately $1,700 for a student entering a graduate degree program in the Department of English. Application deadline: May 30.

DuPont Graduate Entrance Scholarship in Chemistry
Two annual scholarships valued at $1,500 each will be awarded to the top two entering graduate students in the Department of Chemistry. Candidates will be judged on their scholastic and research achievements and potential. No application is necessary; scholarships will be awarded on the recommendation of the Chemistry Graduate Studies Committee. Recommendation deadline: May 30.

Ebc/Epic Graduate Scholarships in Expert Systems
Several scholarships valued between $700 and $1,000 each are available to graduate students in the Centre for Systems Science. These are:

- The Eppich Family Graduate Scholarship
- The Helmut Eppich Graduate Scholarship
- The Hugo Eppich Graduate Scholarship
- The Gordon, Monica, and Sonia Eppich Graduate Scholarship
- The Kaltenegger 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 BC Welding Supplies Ltd. Graduate Scholarship
- The Clark, Wilson Graduate Scholarship
- The Sulzer Bingham Pumps Graduate Scholarship
- The Canadian Liquid Air Ltd. Graduate Scholarship
- The Hanson Inc. Graduate Scholarship
- The Deskin Sales Graduate Scholarship
- The Leslie Wright and 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
- The Ladner Downs Graduate Scholarship
- The Pacific Metals/Leon Lotzkar Memorial Graduate Scholarship
- The Backwater Industries/Edvard Jost Sr. and Jr. 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 Scholarship

Students are nominated for these awards by the Director of the Centre for Systems Science. Nomination deadline: September 30.

Executive MBA Alumni Scholarship
One or more scholarships valued at between $500 and $2,500 awarded to graduate students in the first, second, or third years of the Master of Business Administration Programs. Application deadlines: September 30, January 30, May 30.

Professor Thelma Finlayson Fellowship
Professor Thelma Finlayson has established a $4,000 fellowship to be offered to graduate students enrolled in programs leading to the Master of Pest Management degree. Preference will be given to students working in the field of entomology and applicants must be registered full-time in their studies. Application deadline: September 30.

French Memorial Graduate Scholarship
One award of approximately $1000 for a graduate student in French. Application deadline: May 30.

Arthur and Ancie Fouks Graduate Entrance Award in Public Service
One award valued at a minimum of $4,700 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. Nomination deadline: March 15.

Mahatma Gandhi Memorial Scholarship
A scholarship valued at approximately $700 (derived from the interest accrued by the Mahatma Gandhi Memorial Endowment Fund) will be awarded annually to a Kinesiology graduate student 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. Application deadline: January 30.

Scholarship in Geography
One award of approximately $600 for a student entering a graduate program in geography. Nomination deadline: May 30.

Glen Geen Graduate Scholarship in Marine Biology
One award of approximately $490 for a graduate student in Biological Sciences with a concentration on Marine Biology. Application deadline: September 30.

Sidney Hogg Memorial Graduate Scholarship
Mrs. Sidney Hogg has established a $10,000 endowment, the earned income therefrom to provide a perpetual scholarship of a minimum of $700 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. This scholarship may be used in whole or in part to augment the Canron Limited - Sidney Hogg Memorial Graduate Scholarship providing there is evidence of need in excess of this award. This need will be determined by the Science Faculty and the Senate Graduate Awards Adjudication Committee. Application deadline: September 30.

Imperial Order of the Daughters of the Empire Seaman Morley Scott Graduate Scholarship
A graduate scholarship of approximately $300 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. The Dean of Graduate Studies will make a recommendation for the award to the Senate Graduate Awards Adjudication Committee. Application deadline: September 30.

International Reading Association Scholarship
One scholarship of approximately $500 awarded annually to a full or part-time graduate student pursuing studies in literacy education. Scholarly merit and potential for future contributions are criteria. Application deadline: January 30.
Billy Jones Memorial Graduate Scholarship  
This award of approximately $2,000 was established in honor of the late Dr. B.L. Jones, a faculty member in the Physics Department from 1967 to 1981. It will be awarded annually to a graduate student in Physics. The nomination for the award will be made by the Chairman of the Physics Department to the Senate Graduate Awards Adjudication Committee. Nomination deadline: September 30.

Dr. Tai Whan Kim Memorial Graduate Scholarship in Languages and Linguistics  
One award of approximately $900 for a graduate student in Languages and Linguistics. Application deadline: May 30.

Lang Wong Memorial Endowment Scholarship in Economics  
One scholarship of approximately $2,000 awarded annually to a graduate student in Economics who has completed one semester of graduate work and is a citizen of an Asian developing country. Application deadline: January 30.

Lang Wong Memorial Endowment Scholarship in Engineering  
One scholarship of approximately $2,000 awarded annually to a graduate student in Engineering who has completed one semester of graduate work and is a citizen of an Asian developing country. Application deadline: January 30.

Leon J. Ladner Graduate Scholarship in History  
From the proceeds of a fund donated by Mr. Leon J. Ladner, QC, LLD, an annual scholarship of at least $500 will be awarded to a graduate possessing high academic standing and a special aptitude for research and wishing to undertake post-graduate work in the field of British Columbian history at Simon Fraser University. The spirit of the endowment is to assist financially those to whom financial help is necessary, and who will be qualified in terms of character as well as scholarship, as may be determined by the Senate Graduate Awards Adjudication Committee. Recipients will be expected to register for a higher degree at Simon Fraser University. Application deadline: January 30.

H.R. MacCarthy Graduate Bursary  
The interest accrued from the H.R. MacCarthy Bursary Endowment Fund provides one or more bursaries, totalling approximately $4,500, to graduate students in the Department of Biological Sciences. The award will be based on financial need, good academic standing, and promise of service to mankind through the application of science. Application deadline: September 30.

MacMillan Bloedel IMBB Graduate Scholarship  
One fellowship valued at approximately $4,000 for graduate students carrying out research in the Institute of Molecular Biology and Biochemistry. Application deadline: September 30.

Temple Maynard Memorial Graduate Bursary in English  
One bursary of approximately $2,000 for a graduate student in English. Application deadline: May 30.

National Council of Jewish Women (Vancouver Section) Graduate Scholarship in Women's Studies  
One scholarship of approximately $900 for a graduate student in the first, second or third semester of Women's Studies. The scholarship will be awarded on the recommendation of the Chair of the Women's Studies Graduate Program. Application deadline: September 30.

Hemingway Nelson Architects Graduate Scholarship  
One award of approximately $1,400 for a graduate student carrying out research at the Institute of Molecular Biology and Biochemistry. Application deadline: September 30.

Marshall Noble Memorial Graduate Bursary in Chemical Ecology  
One bursary of approximately $1,000 for a graduate student in the Chemical Ecology Research Group. Application deadline: September 30.

Dr. M. Sheila O'Connell Publication Scholarship  
Two $500 scholarships will be awarded annually to students who are working towards publication of a piece of children's literature. These scholarships are available to both graduate and undergraduate students, and are intended to assist candidates in writing and publishing a children's story. Copies of completed works will be forwarded to Dr. O'Connell. Application deadline: January 30.
Dr. M. Sheila O'Connell Scholarship in Children's Literature
Two $1,000 scholarships will be awarded annually in the Spring semester to graduate students majoring in the field of children's literature within the Faculty of Education and the Department of English. Students will be nominated to the Senate Graduate Awards Adjudication Committee for the scholarship by the Faculty of Education and the Department of English. Nomination deadline: January 30.

Petro-Canada Graduate Scholarship in Science
One scholarship of $2,980 awarded annually to a student pursuing a graduate degree in the Faculty of Science. Application deadline: September 30.

Ann Peters Pinto Graduate Scholarship in Women's Studies
One award of approximately $1,250 for a graduate student in Women's Studies. Application deadline: September 30.

Graduate Entrance Scholarship in Political Science
One award of approximately $200 for a student entering an MA program in political science. Nomination deadline: May 30.

Rogers Communications Inc. Graduate Scholarship in Communication
One scholarship of approximately $1,500 awarded annually to a graduate student in the Department of Communication with a particular interest in issues related to broadcasting or cable. Application deadline: September 30.

Rotary Club of Burnaby - Kingsway Scholarship
A scholarship of $1,000 has been established by the Rotary Club of Burnaby-Kingsway to be given annually to a graduate student in the Faculty of Education in recognition of scholarly merit and the advancement of education practice. Students must be enrolled as full-time graduate students in the Faculty of Education at the time of the application. Application deadline: September 30.

Office of the Registrar Bursary for Disabled Students
One bursary to a disabled graduate or undergraduate student in any Faculty.

William and Jane Saywell Graduate Scholarship in History
One award of approximately $2,000 for a graduate student in History. Application deadline: January 30.

Simon Fraser University Disabled Graduate Student Award
An award of $2,000 per semester for one year may be made by the University to a disabled graduate student. The applicant must be a full-time registered graduate student in good standing whose disability substantially increases the cost of study and who can demonstrate financial need. Application deadline: January 30.

TCG International Graduate Scholarship
One award of approximately $6,800 for a graduate student in Master of Business Administration specialising in marketing, international business or policy analysis. Application deadline: September 30.

Vancouver Horticulture Society Bursary
The Vancouver Horticulture Society has established a $10,000 endowment, the earned income therefrom to provide a perpetual bursary. The bursary is to be awarded to students of the Master of Pest Management Program studying pest problems relating to horticulture. It is awarded to students who need financial assistance in order to continue studies and who are qualified in terms of character and scholarship. Application deadline: September 30.

Garfield Weston Foundation/BC Packers Limited Graduate Fellowship in Aquaculture
One award of approximately $8,000 for a graduate student in Aquaculture. Application deadline: May 30.

Doreen Wilkinson Memorial Graduate Scholarship in Economics
One or more scholarships of approximately $2,000 will be awarded in the Spring semester of each year to graduate students entering the doctoral program in Economics at Simon Fraser University. The fund honors Doreen Wilkinson, Economics Departmental Assistant, friend and mentor to many. Nomination deadline: May 30.
Dr. John Yorston Memorial Graduate Scholarship in Pest Management
One award of approximately $500 for a graduate student in the Master of Pest Management program specializing in crop protection, plant pathology and nematology. Application deadline: May 30.

Scholarships and Fellowships Administered by Federal Government Agencies

Social Sciences and Humanities Research Council Awards
SSHRC offers Doctoral fellowships in the Humanities and Social Sciences valued at $14,436. Applicants must be Canadian citizens or nationals of other countries who have obtained permanent resident status at least one year prior to the competition deadline. Applicants must have completed a Masters degree or at least one year of doctoral study, and will be pursuing full-time studies leading to a PhD or its equivalent. This is a renewable award. The deadline for applications to the department is approximately October 12.

Natural Sciences and Engineering Research Council Awards
NSERC offers postgraduate awards and a limited number of post doctoral fellowships in the fields of science including interdisciplinary research, physical geography and experimental psychology. Canadian citizens and permanent residents who at the time of application are residing in Canada are eligible. Tenure abroad will not be granted to students who are landed immigrants, unless they have received a degree in Science from a Canadian university.

PGSA: valued at $15,600 per year for 2 years and available to students entering the first year of postgraduate study either at the MSc or PhD level. Tenure may be deferred for up to three years.

PGSB: valued at $17,400 per year for 2 years and available to students for the third and fourth years of postgraduate studies on the PhD level.

Deadline: early October but for current deadline consult with the appropriate department.

1967 Science and Engineering Scholarships
Up to 60 scholarships a year are awarded to outstanding students for graduate study and research leading to a doctorate in Canada or abroad. A candidate must have been invited, by the university attended, to submit an application. Value: $21,300 per year for 4 years.

Postdoctoral Fellowships
Fellowships tenable in Canadian universities or universities abroad, and NATO postdoctoral fellowships tenable in NATO countries. Value: $29,000, plus travel grant if required. Deadline: November 15, November 1 for Psychology.

Northern Scientific Training Grants Program
The training program is managed by the Department of Indian and Northern Affairs. The primary purpose of this program is to help advanced students carry out research in the North. The work will normally be undertaken in the Northwest Territories and the Yukon. Eligibility: Students must be Canadian citizens or permanent residents. Value: Training funds are intended to cover transportation costs as well as living expenses up to a per diem rate for time spent in the field. Deadline: November 5.

Awards Administered by the International Council for Canadian Studies
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, 2 Daly Avenue, Ottawa, Ont. K1N 6E2. Deadlines for application are normally in October of each year.

Commonwealth Scholarship and Fellowship Plan
The Commonwealth Scholarship and Fellowship Plan offers awards to graduate students in Commonwealth countries to pursue advanced degrees. They are normally tenable for two years in any of the following countries: Australia, Ghana, Hong Kong, India, Jamaica, Malaysia, New Zealand, Nigeria, Sri Lanka, Trinidad and Tobago, Uganda, United Kingdom.
Scholarships and Fellowships Administered by Other Institutions and Associations

British Columbia Heritage Trust
The BC Heritage Trust Scholarship program offers three awards annually in the following fields: British Columbia Archaeology, British Columbia Architecture and British Columbia History and Archival Programs. Heritage related studies in these fields will also be considered. The awards are made on the basis of the candidate's scholarly record and other relevant documentation. Preference is given to Canadian citizens. Value: $11,000 per annum. Deadline: December 31. Further information may be obtained from the Office of the Dean of Graduate Studies or the Secretary, British Columbia Heritage Trust, Parliament Buildings, Victoria, BC, V8V 1X4.

Canadian Federation of University Women Fellowships
A candidate for any of the following awards must be a Canadian citizen or must have held landed immigrant status for one year prior to submitting application. Information and application forms are available from: The CFUW, 55 Parkdale Avenue, Ottawa, Ontario, K1Y 1E5, and the Dean of Graduate Studies Office.

Margaret McWilliams Pre-doctoral Fellowship
One fellowship of $9,000 is awarded annually to a pre-doctoral woman scholar in any field of study. Masters degree or equivalent; study well advanced (at least one year) into doctoral program; may be studying abroad. Deadline: November 30.

Professional Fellowship
This fellowship of $3,000 is open to any woman who has completed a Bachelors degree from a Canadian university and who is enrolled in graduate work at an accredited professional school. One Professional Fellowship is awarded. The student may be studying abroad. Deadline: November 30.

Alice E. Wilson Grants
Three grants of $1,000 each are to assist in refresher work, specialized study, or training in new techniques. Applicants must have a Bachelors degree or equivalent from a recognized university. Deadline: November 30.

Margaret Dale Philip Award
This award of $1,000 is open to any woman scholar who holds a Bachelors degree from a Canadian university, who resides in Canada and who wishes to embark on, or continue a program leading to an advanced degree in the field of humanities or social sciences. Special consideration will be given to candidates who wish to specialize in Canadian history. Deadline: November 30.

International Federation of University Women
Research Fellowships, Grants and Bursaries. Applicants must be members of CFUW. Deadline: approximately November 15. For detailed information contact: International Federation of University Women, 37, Quai Wilson, CH 1201, Geneva, Switzerland.

Graduate Research and Engineering Technology Awards
The Province of British Columbia is offering the GREAT awards to encourage research collaboration between the universities, business and industry in BC. These awards are open to Canadian citizens and permanent residents only. The fellowships are available to graduate students at BC universities in natural, social sciences and professional disciplines. All BC organizations, both public and private, are eligible to co-operate with the academic institutions, providing that research can be arranged which is acceptable to both the collaborating organization and Simon Fraser University. Tenure is normally for one year, with a possibility of renewal. Further information is available from the Office of the Dean of Graduate Studies Office. Value: to a maximum of $17,000. Deadline: January 19 to Dean of Graduate Studies.

Imperial Order of the Daughters of the Empire War Memorial Postgraduate Scholarships
Eight scholarships will be offered for study towards a graduate degree (Masters degree or equivalent must be completed or in progress at time of application). Deadline: December 1. Eligibility: Canadian citizens; must have done or be doing postgraduate work. Value: $9,000 for study in Canada, $12,500 for study within the Commonwealth. (Possibility of renewal may be considered.)

Note: A candidate must apply in the province of the university from which he/she has graduated.
International Development Research Centre
IDRC offers a number of "Young Canadian Researchers" 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. Value: Up to $20,000 per award.

Mackenzie King Open Scholarships
One award will be offered for study in any field at any university. Eligibility: graduates of any Canadian university. Value: $8,000. Deadline: February 1.

Mackenzie King Travelling Scholarships
Five 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 studies in the United States or the United Kingdom. Value: $13,000. Deadline: February 1.

Monsanto Canada Scholarship in Weed Science
One scholarship is awarded annually at a university in Western Canada to students who have completed one or more years of a Masters or PhD program. Eligibility: Any student entering graduate studies in Plant Science, or Agricultural Engineering with a thesis project on weed control, herbicide chemistry or application technology, weed biology or weed ecology Value: $2,000 Deadline: September 1.

Queen Elizabeth II British Columbia Centennial Scholarship
The purpose of this scholarship is to enable selected British Columbians who have graduated from a public university in BC to take further studies at approved universities in the United Kingdom. Eligibility: a graduate of the University of British Columbia, the University of Victoria, or Simon Fraser University a) who has attended any British Columbia public university for a minimum of two years; b) whose ordinary domicile, home or residence is in B.C.; c) who is a Canadian citizen. Deadline: March 31. Applications are available in the Office of the Dean of Graduate Studies. All enquiries, applications and all documents pertaining to this Scholarship must be forwarded directly to the Chief of Protocol, Ministry of Tourism and Provincial Secretary, Room 29, Parliament Buildings, Victoria, BC, V8V 1X4.

J.H. Stewart Reid Memorial Fellowship
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 satisfactory academic record. Value: $5,000. Application forms are available from the Office of the Dean of Graduate Studies. Deadline: April 30.

Rhodes Scholarships
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: unmarried 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 and application forms are available from the Financial Assistance Office and Dean of Graduate Studies Office. Deadline: October 18.

Rotary Foundation Graduate Scholarships
Awards are made for one year of study in countries in which there are Rotary clubs and in any field but not for independent or unsupervised research for medical internships; the intent of the award is to increase international understanding. Eligibility: Bachelors degree or equivalent; students between the ages of 18-28 inclusive as of March 1 of the competition year. Value: provides for living expenses, transportation, tuition and fees, limited educational travel and intensive language training if required. Application forms are available from The Rotary Club of Vancouver or any other Rotary Club.

Soroptimist Foundation of Canada
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: registered in a graduate program or accepted for the final year of a 4 year undergraduate program. Must be Canadian citizens or permanent residents. Value: several grants of $5,000 each. Deadline: January 31.
Carl H. Wescott Memorial Fellowship
One scholarship is awarded annually to a student whose research work is being carried out at TRIUMF or on TRIUMF related projects. Value: $5,000. Deadline: June 15.

Bursaries and Loans

Simon Fraser University Student Emergency Bursary Fund
This fund has been established primarily to assist graduate and undergraduate visa students who have critical financial need.

Bursaries may be administered by Simon Fraser University, in which case application forms and information are available from the Financial Aid and Awards Office, or they may be administered externally. Applications and enquiries for bursaries which are not administered by Simon Fraser University should be directed to the appropriate agency as indicated in each separate Calendar entry.

Canada Student Loans Plan
The purpose of the Canada Student Loan program is to make financial help available to students who require assistance to carry on full-time studies at the post-secondary level of education.

An eligible single candidate may borrow up to $3,995 each semester. An eligible married candidate with dependants may borrow up to $6,120 each semester. Repayment commences six months after the borrower ceases to be a full-time student at a specified educational institution. No payments are made while the borrower is a full-time student, nor six months thereafter. A student in need of a Canada Student Loan must first obtain an application form from the Financial Aid Office.

Emergency Loans
A fund which allows students to borrow up to $500, interest free, for 60 days providing a definite source of repayment is indicated. The source of funds is for emergency situations only and the amount allowed any student is at the discretion of the Financial Aid Officer.

Student Employment: Work-Study Program
The Simon Fraser University work-study program is designed to provide employment which is mutually beneficial to students and the University. Where possible, an effort is made to provide career-related job experience. Work-study is designed to supplement the BC Student Loans program by

- reducing student debt load
- meeting a lack of expected resources
- covering expenses not serviced by the loan program
- meeting need over the maximum allowed in student loans

A student is eligible for work-study if he/she meets the following criteria:

- is a Canadian citizen or permanent resident
- is a full-time graduate student at Simon Fraser University
- can demonstrate financial need on the application form
- has maintained satisfactory academic standing

Students are normally considered for Simon Fraser University work-study at the time of application for the Canada Student Loan/BC Student Loan and if eligible, will be contacted by mail. Applications are also accepted in the Financial Assistance and Awards Office.

Students are normally considered for Simon Fraser University Work-Study at the time of application for the Canada Student Loan/BC Student Loan or as the result of being named as a preferred candidate. If eligible in either of these categories, students will be contacted by mail. Work-Study is offered in the Fall and Spring semesters.
Faculty of Applied Sciences
Location: 9861 Applied Sciences Building
Telephone: 778.782.4724
Dean: R.G. Marteniuk BPE, MA (Alta), EdD (Calif)

The Faculty of Applied Sciences offers graduate programs in

- Communication
- Computing Science
- Engineering Science
- Kinesiology
- Resource and Environmental Management

Graduate Degrees Offered
- Master of Applied Science
- Master of Arts
- Master of Engineering
- Master of Natural Resources Management
- Master of Science
- Doctor of Philosophy

General Regulations
For admission requirements, registration, residence requirements and time limit for completion of degrees, see Graduate General Regulations.

Faculty of Arts
Location: 6168 Academic Quadrangle
Telephone: 778.782.4414
Dean: E.W. Alderson BA (Haverford), MA, PhD (Calif)
Associate Dean: W.R. Krane BA (S Fraser), MA, PhD (York)
Associate Dean: A. Lebowitz BA (New Rochelle), MA (Wis)

The Faculty of Arts offers graduate programs in

- Archaeology
- Contemporary Arts
- Criminology
- Economics
- English
- French
- Geography
- History
- Linguistics
- Liberal Studies
- Philosophy
- Political Science
- Psychology
- Publishing
- Sociology and Anthropology
- Spanish and Latin American Studies
- Women's Studies

Graduate Degrees Offered
- Master of Arts
- Master of Arts in Liberal Studies
- Master of Fine Arts
- Doctor of Philosophy

General Regulations
For admission requirements, registration, residence requirements and time limit for completion of degrees, see Graduate General Regulations.
Faculty of Business Administration
Dean: S.J. Shapiro AB (Harv), MBA, PhD (Penn)
Associate Dean: C.F. Smart BCom, MBA, PhD (Br Col)

Master of Business Administration Program
Director: L.N. Meredith, BA, MA, PhD (S Fraser)
Location: 2323 Lohn Building
Telephone: 778.782.3639, 778.782.3404 Fax

Executive Master of Business Administration Program
Director: D.M. Shapiro BA (Calg), MA, PhD (C'nell)
Location: Harbour Centre, 515 West Hastings Street, Vancouver V6B 5K3, telephone: 778.782.5013, 778.782.5122 Fax

Faculty and Areas of Research
For a complete list of faculty, see undergraduate Business Administration.
M.F. Abdel Magid, Accounting
N.A. Abramson, International business
A. Bick, Investments and asset pricing
G.W. Blazenko, Business finance
S.B. Blumenfeld, Industrial relations, collective bargaining
G.R. Bushe, Organizational development, strategic human resource management
E.W. Bukszar, Jr., Business strategy, business, government and society
E.U. Choo, Management science
P.M. Clarkson, Accounting
C.M. Collins-Dodd, Retailer decision-making, price expectations
R.A. Davidson, Accounting
C.P. Egri, Organizational power and politics, innovation, leadership
C.E.N. Emby, Accounting
L.D. Etherington, Accounting
D.R. Finley, Accounting
M.R. Fizzell, Accounting
J.N.P. Francis, International and strategic marketing, negotiations, advertising
A.M.G. Gelardi, Accounting
I.M. Gordon, Accounting
R.R. Grauer*, Finance
S.J. Havlovic, Industrial relations, human resource management
J.W. Heaney, Business finance
J.P. Herzog*, Finance, managerial economics
R.A. Holmes*, Quantitative methods
J.C. Hsieh, Accounting
C.V. Jones, Management science, decision support systems
C.E. Love, Management science
B.J. MacKay, Accounting
G.A. Mauser, Marketing
S.L. McShane, Human resource management, organizational behavior
H. Merchant, International business
L.N. Meredith, Business marketing, marketing strategy
D.C. Parker, Decision support systems
L.T. Pinfield, Organization behavior, organization policy
G. Poitras, International finance, econometrics, financial Institutions
Z. Rebmann-Huber, Accounting
B.H. Reich, Management of the information technology function, strategic information systems, qualitative research
J.G. Richards, Business, government and society
B. Schoner, Marketing, business, government and society, quantitative methods
R.W. Schwindt*, Industrial organization; international trade; business, government and society
D.M. Shapiro, Industrial organizations, managerial economics, business and public policy
S.J. Shapiro, Marketing
J.P. Sheppard, Business policy, corporate failure and survival
C.F. Smart, Business policy, organizational behaviour
M.N. Stark, Commercial law
D.W. Tjosvold, Organizational behavior
R.L. Tung, International business
K.E. Vandezande, Investments, financing and financial markets
A.R. Vining, Business policy, business government and society
A.R. Warburton, Management science
W.C. Wedley, International business, operations management
M.N. Wexler, Business, government and society, organizational behavior and theory
R.G. Wyckham, Marketing
J.L. Zaichkowsky, Marketing

*joint appointment with Economics

Graduate Degree Offered
Master of Business Administration

Programs Offered
The Faculty of Business Administration offers the following programs.

MBA Program (see below)
Executive MBA Program (see below)

Graduate Programs
The Faculty of Business Administration offers two programs leading to the MBA degree; the Executive MBA program and the MBA program. The Executive MBA program is a weekend or weeknight 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 MBA program is a daytime program designed primarily for recent graduates who desire more concentrated exposure to a specific field of Business study and development of applied research skills. Recent graduates with a Business degree move directly to study in an area of concentration. Non-Business graduates are required to complete two semesters of study in general business courses before proceeding to their area of specialization. Such students will normally select their area of specialization by the end of their second semester of study.

MBA Program
The MBA program has a subject specialization focus in the following fields of concentration.

accounting
finance
human resource management
International business
management science/information systems
marketing
policy analysis

Additional fields of concentration are available with the approval of the student's Supervisory Committee. For example, students can take supporting courses in such disciplines as Resource Management, Economics, Computing Science, Criminology, and Engineering Science.

Admission: Students with Undergraduate Business Administration Degrees
For clear admission to the program a student must have a Bachelors degree from a recognized university with a concentration in Business Administration (or its equivalent). The student should have normally completed course work in differential calculus,* statistics, managerial economics (or micro economics), accounting, management science (or operations research), finance, marketing, human resource management, and business policy (or business and society). Students admitted without all of these courses may be required to make up the deficiency without graduate credit.
The maximum number of students directly admitted in any one year to an area of concentration is expected to be 30. The minimum undergraduate grade point average required for admission is 3.0 (or equivalent). Criteria for admission, in addition to undergraduate grades, include acceptable scores on the GMAT test (see Application Process), strong letters of reference, and for students whose native language is not English, acceptable TOEFL scores (570 minimum) and a score of 5 or above on the Test of Written English.

The program is designed for students with an undergraduate business/commerce degree. Students may begin in September, January or May. Courses are sequenced through the three semesters: Fall, Spring and Summer. The normal course load is three courses per semester. In this manner, it is possible to complete the program in one year; although many students require four semesters to finish their research project. Students choosing the thesis option may expect to take one additional semester in order to complete BUS 900. Students holding teaching assistantships will take two courses per semester as a normal workload. Thus, the completion time for a student holding a teaching assistantship over their whole program is typically five or six semesters. In certain cases, students may be admitted to the program in other semesters.

*Integral calculus is also required for specializations in Finance, Management Science and Information Systems, and Marketing. It is recommended for specialization in Accounting.

Admission: Students with Undergraduate Degrees Other than Business Administration

Students with Bachelors degrees in disciplines other than Business Administration are normally required to have completed courses in probability and statistics, an introduction to computer programming, and differential and integral calculus. At Simon Fraser University appropriate courses are BUEC 232, BUEC 333, CMPT 100, MATH 157 and MATH 158.

Students with a Bachelors degree in disciplines other than Business Administration will, upon admission, be required to complete the following eight courses prior to proceeding to the 800 level subjects.

**Fall Semester**
- BUS 507-4 Managerial Economics
- BUS 527-3 Financial Accounting
- BUS 536-4 Quantitative Methods in Management
- BUS 543-4 Introductory Graduate Marketing

**Spring Semester**
- BUS 512-4 Introduction to Business Finance
- BUS 528-3 Managerial Accounting
- BUS 572-4 Organizations and Human Resources Management
- BUS 578-4 Strategic Management

Students entering the program with an equivalent course to any of those specified above will be granted an exemption.

It is expected that approximately 30 students per year will be admitted to the 500 level courses. The minimum undergraduate grade point average considered is 3.0 (or equivalent). Criteria for admission, in addition to undergraduate grades, include acceptable scores on the GMAT test (see Application Process), strong letters of reference, and for students 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 entering the program without Business degrees are expected to complete the 500 level courses in two semesters. As the University operates on a trimester system students may immediately begin 800 level courses in the Summer semester.

**Application Process**

Students must submit the following documentation when applying.

- Simon Fraser University graduate application form
- Faculty of Business Administration supplementary application form
- official transcript of undergraduate grades (mailed directly from the granting institution)
- three confidential letters of reference (mailed directly by the referees), at least two of which come from faculty members at universities. (Forms are supplied for references.)
• score on the Graduate Management Admissions Test (GMAT)
• Students whose first language is not English and whose undergraduate degrees have not been obtained at an institution in Canada, the United States, the United Kingdom, Australia or New Zealand where English is the language of instruction, require scores on the Test of English as a Foreign Language (TOEFL) and the Test of Written English.

Financial Assistance
The Faculty of Business Administration is able to offer most qualified graduate students Teaching Assistantships in Business Administration. Remuneration is normally $4,434 per semester. For students holding a teaching assistantship, it is expected two courses will constitute a full load. In addition to teaching assistantships, members of faculty, from time to time, have funding available to hire Research Assistants.

A number of graduate fellowships are available to students who demonstrate high academic performance.

Information on other university scholarships and awards available to graduate students is included in the Financial Aid and Awards section of this Calendar.

Degree Requirements
To qualify for the MBA degree under this program, the candidate must complete the requirements under one of two available options: the Project Option or the Thesis Option.

For the project option the student must complete a minimum of 3 courses in a field of concentration and a minimum of at least one course in a supporting field and one course in research techniques. A total of eight courses are required for the project option. Of these, four must be taken as supporting or research courses. In addition, the student must complete a written research project equivalent to one course. A project will generally represent successful original research with regard to some practical problem. While the student is expected to conduct a literature search with respect to the problem, it will generally be less exhaustive in comparison with that of the thesis. The scope of a project is regarded as equivalent to one graduate course.

For the thesis option, the student must complete a minimum of three courses in a field of concentration as well as taking at least one course in research techniques and BUS 900, Research Methodology. A total of six courses are required in the thesis option. In addition, the student must complete a written research thesis equivalent to three courses. In general, a thesis represents a major research effort in which the student, working closely with the supervisory committee, demonstrates a comprehensive knowledge of the literature on some aspect of a discipline and successfully completes original research which represents a contribution to knowledge in the area.

The requirements and options for each of the areas are detailed below.

Fields of Concentration: 3 course minimum

**Accounting**
- BUS 871-4 Seminar in Financial Accounting
- BUS 872-4 Seminar in Managerial Accounting
- BUS 873-4 History of Accounting Thought
- BUS 874-4 Advanced Topics in Accounting
- BUS 875-4 International Accounting

**Finance**
- BUED 815-4 Portfolio Theory
- BUED 817-4 Theory of Capital Markets
- BUED 818-4 Advanced Topics in Business Finance

**Human Resource Management**
- BUS 831-4 Industrial Relations
- BUS 836-4 Human Resources Management
- BUS 839-4 Organizational Assessment and Planned Change
International Business
BUS 862-4 Contemporary Topics in International Business
BUS 875-4 International Accounting
BUS 881-4 Trade Policy and Management
BUS 882-4 Doing Business with the Pacific Rim Countries
BUS 883-4 International Business and Multinational Enterprises
BUS 884-4 Comparative Management
BUS 885-4 International Human Resource Management
BUS 886-4 Management of International Firms
BUS 887-4 Entry Strategies for International Markets

Management Science and Information Systems
BUEC 819-4 Mathematical Programming for Economics and Business
BUEC 820-4 Analysis of Dynamic Processes
BUEC 823-4 Business and Economic Forecasting
BU 821-4 Analysis of Inventory and Queuing Systems
BUS 822-4 Decision Theory
BUS 876-4 Decision Support Systems

Marketing
BUS 845-4 Marketing Measurement
BUS 846-4 Marketing Theory and Models
BUS 847-4 Consumer Behavior
BUS 848-4 Research in Marketing Strategy

Policy Analysis
BUS 850-4 Theoretical Issues in Strategic Management
BUS 852-4 Researching the Corporation in Canadian Society
BUS 854-4 Business and Government Regulation
BUS 858-4 Business and the Public Interest
BUS 860-4 Administration of Public Enterprises

Supporting Courses
The academic supervisor will select supporting courses in consultation with the student. The selections may be either from Business Administration or from other fields of study (e.g., Economics, Resource Management, Computing Science, Psychology).

Research Courses
Project option students must take at least one course in research techniques (BUS 801 or equivalent). Thesis option students are required to take BUS 900 in addition to a minimum of one course in research techniques.

The academic supervisor will select the research courses in consultation with the student. Students taking BUS 900 should complete their other research courses first.

MBA Program Courses

BUS 507-4 Managerial Economics
The course combines economic theory and quantitative methods techniques to develop models and rules for managing resources efficiently. Prerequisites: 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. Prerequisites: BUS 507 and BUS 528 or permission of the instructor.
BUS 527-3 Financial Accounting
Concepts, principles and contemporary issues in financial accounting from the user perspective. Prerequisites: 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. Prerequisites: 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. Prerequisites: introductory Statistics/Computing/Mathematics, or permission of the instructor.

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. Prerequisites: 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. Prerequisites: BUS 507, 527, 536, 543.

BUS 801-4 Research Techniques
The design, conduct, and analysis of business research including both field and laboratory research methods. Prerequisite: BUEC 333, or permission of the instructor.

BUEC 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, or permission of the instructor.

BUEC 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. Prerequisites: ECON 331, 835, or permission of the instructor.

BUEC 818-4 Advanced Topics in Business Finance
Extension of advanced topics beyond those covered in BUEC 815, Portfolio Theory, and BUEC 817, Theory of Capital Markets. Prerequisites: BUEC 815, 817.

BUEC 819-4 Mathematical Programming for Economics and Business
Topics include dynamic programming, linear and non-linear programming, stochastic programming, optimization techniques, game theory. Prerequisite: permission of the instructor.

BUEC 820-4 Analysis of Dynamic Processes
Analysis of the operation of dynamic (time-varying) economic/business systems with emphasis on model formulation and optimization procedures.
BUS 821-4 Analysis of Inventory and Queuing Systems
The design and control of inventory and queuing systems. Approaches include analytical and numerical models, algorithms for optimizing such systems and simulation for large, complex systems. Prerequisite: BUEC 333 or equivalent.

BUS 822-4 Decision Theory
An examination of prescriptive (Bayesian) theory of decision making under uncertainty and critical investigation of the theory. Prerequisite: BUEC 333, MATH 157, or permission of the instructor.

BUEC 823-4 Business and Economic Forecasting
Concepts of forecasting including trend fitting, time series, regression, econometric survey data, leading indicators. Application to business, economics, population, technology. Prerequisite: BUEC 333, or permission of the instructor.

BUS 831-4 Industrial Relations
Negotiation, arbitration, collective agreements, work stoppages, labor-management co-operation.

BUS 836-4 Human Resources Management
Management of human resources in work organizations. Topics generally include assessment of the work environment, performance evaluation and compensation, recruiting and training. Prerequisites: BUS 481, 482.

BUS 839-4 Organizational Assessment and Planned Change
Current theory, research and practice in organizational diagnosis and planned change. Prerequisite: advanced undergraduate course work in Micro and Macro Organizational Behavior.

BUS 845-4 Marketing Measurement
The generation and analysis of non-accounting information from sources both internal and external to the firm, with the purpose of understanding the use of such measurements in marketing segmentation. Prerequisite: BUS 801.

BUS 846-4 Marketing Theory and Models
The construction, analysis and application of models of marketing phenomena. Prerequisite: BUS 801.

BUS 847-4 Consumer Behavior
A study of the results of consumer interactions with the forces affecting purchase decisions. The influence of environmental, corporate, and governmental factors on consumer behavior and the processes of consumer decision-making will be examined. Prerequisite: BUS 347, 801 or permission of the instructor.

BUS 848-4 Research in Marketing Strategy
Research in strategy integrates marketing models, competitive marketing theories, and marketing strategic analysis. Cases and computer simulations may be used to demonstrate competitive strategic decisions. Prerequisite: BUS 801.

BUS 850-4 Theoretical Issues in Strategic Management
This course investigates the theoretical basis of strategic management particularly in the areas of strategic decision making, formulation and implementation. Prerequisite: BUS 578 or equivalent.

BUS 852-4 Researching the Corporation in Canadian Society
Research in contemporary theory and methods of investigating and conducting scientific research in Canadian corporations.

BUS 854-4 Business and Government Regulation
The theory and practice of public policy in the area of industrial organization. Topics include anti-competes, utility regulation, patent policy, and other policies directed at market failure. Prerequisite: ECON 200, or permission of the instructor.

BUS 858-4 Business and the Public Interest
Society requires business to act in the "public interest" by means both of explicit (legislated) rules and implicit social contracts. This course deals with these social contracts and will include discussions of employment policies, investment policies, charitable donations, environmental concerns and community service.
BUS 860-4 Administration of Public Enterprises
History, models of organizations of public corporations and their divergence from private counterparts. Public accountability decision-making, cost-benefit theories.

BUS 862-4 Contemporary Topics in International Business
The analysis of specific issues in international business/multinational firms, Canada's regulations, international financial management, international marketing, international operations, foreign investment and the international environment.

BUS 871-4 Seminar in Financial Accounting
An in-depth analysis of current literature in financial accounting theory and practice. Emphasis will be placed on recent empirical research. Prerequisite: permission of the instructor.

BUS 872-4 Seminar in Managerial Accounting
An integrative course intended to develop an appreciation of the interrelationship of managerial accounting and analytical, behavioral and technological considerations in analysis and design of control systems. Emphasis will be placed on empirical research. Prerequisite: permission of the instructor.

BUS 873-4 History of Accounting Thought
An advanced course that traces the evolution of accounting and relates the historical development to present accounting theory and practice. Prerequisite: undergraduate accounting theory.

BUS 874-4 Advanced Topics in Accounting
Selected advanced topics in accounting. A continuation of 871 and 872 with emphasis on the interrelation between financial and managerial accounting. Particular attention will be devoted to present and developing problem areas and the research related to those problems. Prerequisites: BUS 871 and 872, or permission of the instructor.

BUS 875-4 International Accounting
Comparative systems of accounting. Evolution of multinational business and accounting implications. Prerequisites: BUS 871 and 346, or permission of the instructor.

BUS 876-4 Decision Support Systems
Design and application of computer-based information systems to support managerial decision making in organizations.

BUS 881-4 Trade Policy and Management
This course examines the impact of the North American Free Trade Agreement on domestic and international regulation of business, and the implications for North American business management in the 1990s and the 21st century. Prerequisite: permission of the instructor.

BUS 882-4 Doing Business with the Pacific Rim Countries
The course seeks to examine the opportunities and challenges of doing business with the Pacific Rim countries. Topics include the analysis of foreign investment climate, business negotiations and marketing strategies. Prerequisite: permission of the instructor.

BUS 883-4 International Business and Multinational Enterprises
The course identifies theories, information and research findings which are useful in understanding different aspects of managing multinational operations, such as foreign investment, organization and control. Prerequisite: permission of the instructor.

BUS 884-4 Comparative Management
The course compares and contrasts similarities and differences in management styles and practices across countries. It seeks to develop an appreciation of what it is like to work with people from other cultures. Prerequisite: permission of the instructor.

Bus 885-4 International Human Resource Management
The course seeks to identify how cultural differences affect the practice of international human resource management; and to understand the linkage between international human resource strategy, organizational structure and corporate strategy. Prerequisite: permission of the instructor.
BUS 886-4 Management of International Firms
This course deals with strategic requirements for the management of multinational corporations. Firm-specific and institutional challenges facing global managers in formulating and implementing profitable strategies are also discussed. Prerequisite: BUS 883.

BUS 887-4 Entry Strategies for International Markets
Product-market entry decisions as well as choices on foreign market entry mode (exports, licensing, direct investment, etc.) are discussed. This course also deals with co-operate alliances in international business. Prerequisite: BUS 883.

BUS 893-4 Selected Topics in Business Administration

BUS 894-4 Selected Topics in Business Administration

BUS 895-4 Selected Topics in Business

BUS 896-4 Selected Topics in Business

BUS 897-4 Directed Readings
Supervised reading and report preparation in a particular field of specialization.

BUS 898 MBA Thesis

BUS 900-4 Methodology Seminar/Research Workshop
This course, which will meet twice weekly, will devote one-half to an examination of methodological approaches including selection, planning and conduct of research and philosophy of science and one-half to attendance at faculty and graduate student workshop presentations. The methodology section of the course is intended to place students' research methodology in a broader context for critical evaluation. The workshop section will require students to present their own research finding for critical evaluation. Prerequisite: completion of prior required research courses, or permission of the instructor. BUS 999 MBA Project

Executive MBA Program
The Executive MBA program offers the skills, insights and frameworks that experienced, high-potential managers need to prepare for the next phase of their careers. The program takes a general management perspective, focusing on organizational and decision-making processes that cut across functional divisions. It is designed for those who wish to expand their potential and develop the strategic and global perspective required of tomorrow's senior managers. Using a cohort model where students take courses in the same sequence, the program encourages student interaction and co-operation; study groups and project teams are an important aspect of the learning experience.

Because Executive MBA students pursue full-time careers, classes meet either two nights a week or alternate weekends all day Friday and Saturday. All classes are held at Simon Fraser University at Harbour Centre centrally located in downtown Vancouver. Students in the weekend residential program have Friday night accommodation provided as part of tuition. Students take two courses per semester, completing the course work in three years through the weeknight program, or in two years through the weekend residential program. All students begin in September. There is a one month break between semesters and weekend students do not attend during the summer semester. Immediately following acceptance in May, all students participate in a preparatory skills module that includes instruction in numeracy, e-mail, the electronic library and Internet. At the same time, students with no micro-economics training should review our recommended self-study guide.

Admission Requirements
Applicants will be considered for admission to the program based on the following criteria.

- current business experience, with four to five years in management positions
- GMAT (Graduate Management Admission Test) results
- academic qualifications, including an undergraduate degree (B average) or a professional designation*
- letters of reference
*While priority will be given to applicants 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 15 for September enrollment in the same year. In order to have your application reviewed for the September enrollment, you must have written the mid-March GMAT (which requires registering with the Education Testing Service by the end of January).

All students must demonstrate proficiency in mathematics and analytical writing skills. Students may also wish to prepare for the program by developing the following proficiencies: computer skills, using a PC in a Windows environment with Microsoft Word and Excel applications; reading and comprehension skills; and business and report writing.

For program requirements, see Faculty of Business Administration in the Graduate Studies section.

**Degree Completion Requirements**

Students must complete twelve courses, two of which are electives, with a minimum B grade average, and should expect to spend 25-30 hours a week on their studies. Electives in the past two years have included: managing innovation; doing business with the Pacific Rim; managing new ventures; and a leadership and group development laboratory. In place of the 600 level MBA course offerings listed below, students may substitute, with the prior consent of the Executive MBA Graduate Program Committee, equivalent graduate course work from any department in Simon Fraser University. Prior approval is not required for students to substitute 800 level BUS or BUEC courses as electives. In extraordinary circumstances, and with the prior permission of the Executive MBA Graduate Program Committee, students may alter the course load of two courses per semester.

**Weeknight Program Schedule**

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<tr>
<th>Semester 1 Fall</th>
<th>Semester 2 Spring</th>
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<tr>
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<th>Semester 6 Spring</th>
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MBA 632-5 Operations Research
MBA 603-5 Organization and Management

Semester 3 Summer
MBA 670-5 Accounting for Decision Making and Control
Elective

Semester 4 Fall
MBA 615-5 Marketing Management
MBA 606-5 Financial Management

Semester 5 Spring
MBA 607-5 Business Policy
MBA 691-5 Business, Government and Society

Semester 6 Summer
MBA 696-5 Seminar in Strategic Analysis
Elective

Executive MBA Program Courses

MBA 603-5 Organization and Management
Analysis of the inter-relatedness of major subdivisions of the organization and interactions between the organization and its environment. The management of motivation and job design.

MBA 604-5 Organizational Change and Development
An examination of the concepts, principles and assumptions of organization development.

MBA 606-5 Financial Management
An introduction to decision making with respect to investments (capital budgeting), financing and dividend policy.

MBA 607-5 Business Policy
Analysis of problems affecting the character and success of the total enterprise. Emphasis on the functions, responsibilities, and viewpoint of top-level general management.

MBA 610-5 Directed Studies in Business Administration
Individual study with a faculty member. The course outline must be approved by the Graduate Program Committee.

MBA 611-5 Directed Studies in Business Administration
Individual study with a faculty member. The course outline must be approved by the Graduate Program Committee.

MBA 612-5 Directed Studies in Business Administration
Individual study with a faculty member. The course outline must be approved by the Graduate Program Committee.

MBA 615-5 Marketing Management
An analysis of the strategic consideration of marketing management and their impact on the firm and its competitors.

MBA 621-5 Management Information Systems
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.

MBA 632-5 Operations Research
Quantitative methods to cope with problems of complexity, uncertainty, and lack of information in organizational decision-making.
MBA 634-5 Business Forecasting
Modern forecasting methods applied to a variable of interest to the student and his employer. Students taking the course must have access to at least 5 years of monthly data or 12 years of quarterly data on the variable to be forecast. Generally, the paper written for this course will provide the basis for the MBA project.

MBA 635-5 Business Strategies Simulation
Students will manage computer simulated companies in a generalized tool and dye industry. Each company will consist of four students comprising the management team. All decisions relating to the success or failure of the firms are the responsibility of the management team, but as such, each management team is responsible to the Board of Directors of the company. Return on shareholders' equity is a significant component of the measure of success of each company.

MBA 651-5 Managerial Economics
Applications of economic theory to practical business decision-making.

MBA 660-5 Special Topics in Business Administration
Course content varies from semester to semester. Specific course outlines and bibliographies must receive prior approval of the Graduate Program Committee.

MBA 661-5 Special Topics in Business Administration
Course content varies from semester to semester. Specific course outlines and bibliographies must receive prior approval of the Graduate Program Committee.

MBA 662-5 Special Topics in Business Administration
Course content varies from semester to semester. Specific course outlines and bibliographies must receive prior approval of the Graduate Program Committee.

MBA 663-5 Special Topics in Business Administration
Course content varies from semester to semester. Specific course outlines and bibliographies must receive prior approval of the Graduate Program Committee.

MBA 670-5 Accounting for Decision Making and Control
Analysis of financial statements and their role in evaluation of the firm, and of internal financial information and its function in planning, control and performance evaluation.

MBA 681-5 Interpersonal Behavior in Organizations
Interpersonal relations and group dynamics in organizational life. Development of perceptual and communication skills in small groups. Leadership theory and work group behavior.

MBA 688-5 Industrial Relations
Collective bargaining, the collective agreement, work stoppages, arbitration and the legal environment.

MBA 689-5 Special Topics in Business Administration
Course content varies from semester to semester. Specific course outlines and bibliographies must receive prior approval of the Graduate Program Committee.

MBA 690-5 The Canadian Economy
An investigation of Canadian economic issues and problems, with particular emphasis on their impact on business decisions.

MBA 691-5 Business, Government and Society
Relations between business and other social institutions such as government, religion, and education. Non-market forces in the environment influencing business decisions.

MBA 695-5 Methods of Research
Methods and aims of business research and how it contributes to effective management.
MBA 696-5 Seminar in Strategic Analysis
Students will undertake a strategic industry analysis or policy analysis, present results to the client and prepare a written report that is submitted to the Library. Prerequisites: MBA 607, MBA 691.

MBA 698-5 Directed Studies in Business Administration
Individual study with a faculty member. The course outline must be approved by the Graduate Program Committee.

MBA 699-5 Research Project
Execution of research project under faculty supervision. No formal classes.

Joint Masters In Business Administration and Natural Resource Management
For information about this program, see the School of Resource and Environmental Management in the Graduate section.

Faculty of Education
Location: 8655 Multi Purpose Complex
Telephone: 778.782.4787, 778.782.3203 Fax
Dean: R. Barrow BA, MA (Oxf), PhD (Lond)
Graduate Program Director: M. Manley-Casimir BA (Exe), MEd (Br Col), PhD (Chic)

Faculty and areas of research
For a complete list of faculty, see Education undergraduate section.
S. Bailin, Drama education, philosophy of education, aesthetic education
R. Barrow, Philosophy of education, moral philosophy, curriculum theory, teacher education
J.D. Beynon, Multi-cultural/anti-racist education; Canadian education of First Nations, minority group students; career aspirations of minority students (with special emphasis on teaching); social context of education; preparation of teachers, administrators to work with students of diverse cultural background; development and implementation of multi-cultural, anti-racist curriculum.
J. Blaney, Higher education, program development, management
R. Case, Social studies, curriculum, critical thinking, curricular integration, law-related education, global/development education
P.E.F. Coleman, Educational governance and particularly school boards, program and personnel supervision, policy processes, community involvement, educational finance, cost effectiveness
D. Dagenais, French language education, bilingualism, socio-linguistics, literacy, ethnography, educational change
A.J. Dawson, Mathematics education, teacher education, computers in education
J. Dawson, History of education, history of childhood, children's literature
S.C. deCastell, Literacy, critical theory, gender equity, gender and technology cultural studies, socio-cultural theory
K. Egan, Curriculum, individual development
R.D. Gehlbach, Educational play, instructional theory
P.P. Grimmet, Teacher education and teacher development, curriculum development and implementation, educational leadership, sociology of schools and teaching English and language education
C. Haig Brown, Ethnography, anthropology/sociology of education, first nations education, feminist theory
C.M. Hamm, Philosophy of education, ethics and education, educational accountability, curriculum theory
A.O. Horvath, Family and couple's counselling, therapeutic relationships, attributional processes
L. Kanevsky, Education of gifted children and other special needs children, educational psychology
A.C. Kazepides, Philosophy of education
L. LaRocque, Community, collaboration, ethic of caring, leadership, district-school relations, implementation of change, school reform, educational policy, teacher education
L. LeMare, Socio emotional development, peer relationships, early childhood education
A.M. MacKinnon, Science education, teacher education
C.M. Mamchur, Theory and curriculum development, secondary English, the writing process, development of pre/in service training programs, learning styles, integration of drama, literature and narrative writing
M. Manley-Casimir, Socio-legal context of educational policy and practice, specifically, the impact of the Charter of Rights and Freedoms on educational policy, normative structure of teaching, use of discretion in administrative decision-making, judicial use of US case law in post-Charter educational litigation in Canada, judicial decisions, legal norms and professional compliance in schools
J. Martin, Psychology of education, counselling psychology
M. McLaren, Environmental education, science education, problem solving and decision making, especially in context of environmental problems. Impact of new information technologies and changing work/recreational patterns on schooling and adult
education
A.A. Obadia, French education, second language learning, French immersion, applied linguistics, error analysis, psycholinguistics, sociolinguistics, multi media, bilingualism
T.J. O'Shea, Mathematics education including curriculum development, problem solving, applications, and evaluation, large scale assessment and test development, educational research
L. M. Prock, Instructional theory and practice, learning disabilities, educational psychology
S. Richmond, Visual arts education, aesthetic education
W.M. Roth, Science, mathematics and technology education, qualitative research, socio-cultural aspects of learning, epistemology, situated cognition
G.P. Sampson, Teaching English as a second language; the origin and development of the scientific registers of the English language
J. Scott, Reading and language development, vocabulary instruction, cognition, early literacy, teacher education
Y. Senyshyn, Philosophical analysis applied to creative live musical performance and aesthetic theory, problem of language applied to music, education and musical criticism
S. Smith, Physical education, phenomenological inquiry, pedagogical theory, and children's play interactions
D. Sumara, English language arts education, curriculum theory, teacher education, gay and lesbian studies, interpretive research methods
J. Thompson, Counselling, close relationships, career development
K. Toohey, Teaching English as a second language, minority language education, integration of students of ESL
S. Wassermann, Teacher education, curriculum and instruction, emphasis on curriculum and program development, instructional strategies, teaching for thinking, teaching by the case method
M. F. Wideen, Science education, curriculum evaluation and implementation, in-service and change in education, teacher education
P. H. Winne, Instructional psychology, advanced computer technologies for instruction, research methodology
B.Y.L. Wong, Intervention research on connections between reading and writing, social problems in LD adolescents, metacognition and motivation
R. Zazkis, Mathematics education
M. Zola, Language and language learning: the language arts, literature for children and young people, literary criticism, writing for children, human growth and development, curriculum and program development, learning and teaching

Programs Offered
The Faculty of Education offers Masters programs in
Administrative Leadership (see below)
Curriculum and Instruction (see below)
Counselling Psychology (see below)
Psychology of Education (see below)

The Faculty of Education offers Doctoral programs in
Arts Education (see below)
Curriculum Theory and Implementation (see below)
Psychology of Education (see below)

Graduate Degrees Offered
Master of Arts
Master of Education
Master of Science
Doctor of Philosophy

The Faculty of Education offers graduate programs leading to MEd, MA, MSc, 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 the acquisition of advanced knowledge about and advanced training in educational practice. In some programs, 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 MEd programs that include a project must successfully complete a minimum of 33 semester hours divided between courses (at least 28 semester hours) and EDUC 881 Masters Project (5 semester hours). Minimal requirements for MEd programs that do not include the project are successfully completing a minimum total of 35 semester hours in required and elective courses, plus a final comprehensive examination. The content of EDUC 883 MEd Comprehensive Examination varies by program.

The MA, MSc, and PhD are degrees signifying the acquisition of advanced knowledge in the student's field of specialization and advanced competence in conducting significant and original research in education.
Minimal requirements for the MA and MSc degrees are successful completion of 33 semester hours of graduate work divided between required and elective courses (at least 23 semester hours) and EDUC 898 Masters Thesis (10 semester hours).

Minimal requirements for the PhD degree are successful completion of at least 30 semester hours of graduate work beyond requirements for a MA or MSc, consisting of at least 20 semester hours divided among required and elective courses and EDUC 899 Doctoral Thesis (10 semester hours).

**Admissions**

Refer to the Graduate General Regulations, section 1.3 for the University's admission requirements. Under exceptional circumstances, applicants who do not meet these general requirements may be considered for admission if they demonstrate superior scholarly or professional attainments.

In addition to criteria for admission as a graduate student to the University, applicants to graduate programs in the Faculty of Education are judged on the following criteria.

- academic excellence
- knowledge or demonstrated expertise in areas relevant to the chosen program of study
- communicative competence
- capacity for self-directed study
- personal commitment to completing the program in a timely manner
- In addition to the University's and the Faculty of Education's application forms, applicants must submit
- a 500-word essay explaining why they wish to pursue graduate work in their chosen program
- one recent academic paper that involves sustained argument
- three letters of reference completed by scholars or professionals who know well the applicant's potential to complete graduate studies successfully
- a $40 Graduate Studies application fee payable to Simon Fraser University

A student also may be required to have an interview and, in special circumstances, may be required to provide additional proof of eligibility.

Admission to graduate study in the Faculty of Education is granted to undertake a specific program of study and is competitive within each program. Applications for all programs are reviewed once each year, in March and early April. The application package must be complete and received by February 15 preceding the September in which the graduate program begins. Decisions are available on April 15 or the first business day thereafter. The number of students admitted is always contingent upon the availability of faculty members to supervise students' programs. Information describing programs and their individual requirements is available from

Graduate Programs
Faculty of Education
Simon Fraser University
Burnaby, BC V5A 1S6
Telephone 778.782.4787, Fax 778.782.3203

**Admission to an Individual Program**

Applicants wishing to undertake graduate studies in an area that can not be addressed in a regularly offered graduate program (see Programs of Study, following) may apply for admission to an Individual Program. An Individual Program leads to the MA or the MEd with project.

Applications for admission to an Individual Program must include the Individual Study and Research Plan, plus a one page proposal for a Masters project or Masters thesis. The Plan specifies a curriculum of required and elective courses. A member of the Faculty of Education must approve and sign the Plan and the proposal, thereby agreeing to serve as Senior Supervisor of the student's program and the project or thesis. Because consultation with a member of the Faculty may involve revisions to an initial Plan and proposal, applicants are encouraged to begin the application process well in advance of the deadline for receipt of applications, February 15. Decisions about admission to an Individual Program are made by the Graduate Programs Committee.
Supervision
Upon admission to a program other than an Individual Program, a pro-tem advisor will be appointed by the Director of Graduate Programs. The pro-tem advisor offers counsel regarding elective course work and, in those programs requiring a project or thesis, about selecting a committee to supervise this work. For additional information on supervisory committees, refer to the Graduate General Regulations, section 1.6.

Research Competence Requirement
Masters students must demonstrate research competence appropriate to the proposed research to the satisfaction of their Supervisory Committee. Such competence can be demonstrated in different areas, e.g. research design, quantitative and/or qualitative analysis, conceptual analysis, legal analysis, historiography, inter alia. In cases where the Supervisory Committee deems it necessary, the Committee may require the student to acquire adequate competence through prescribed means (such as a course).

Residence Requirements
Refer to the Graduate General Regulations, section 1.7.

Examining Procedures

MEd Comprehensive Examination
The comprehensive examination will be based on a list of key readings, chosen by associated faculty members in consultation with students at the beginning of the degree, to be studied concurrently with the coursework. Students will be required to write a culminating essay(s) based on these readings prior to the completion of the degree. The essay(s) will be set by the associated faculty members in consultation with the Director of Graduate Programs. Students will be required in the essays to link the key readings to the coursework content and also to their own professional practice. The essay(s) will be evaluated, using criteria designated by the associated faculty group, on a pass/fail basis by at least two associated faculty plus one other suitably qualified non-associated faculty member. A follow up oral examination may be required at the discretion of the reading committee. The results of the examination will be made available to students prior to the end of the semester in which it is taken. Students who fail the examination will be asked to take it again. A student who fails a second time will be required to withdraw.

MEd Project
Except in an Individual Program, before the end of the fourth semester in residence, the student will normally present a written project proposal to the pro-tem advisor or the chosen senior supervisor. Following consultation, the student will seek a second member to complete the supervisory committee. Once the project proposal is final and approved by the full supervisory committee, the student proceeds to conduct the project. A project report will be read by both members of the supervisory committee and by a suitably qualified External Reader. Three outcomes are possible.

- The project may be passed.
- The project may be judged marginally inadequate. In this case, the student will be required to undertake specific supplementary work (such as providing an alternative analysis of evidence or data, incorporating further information) and resubmit the project. If the revised project is judged adequate by the supervisory committee, the project will be passed.
- The project may be failed, and the candidate required to withdraw from the University.

MA and MSc Thesis
Except in an Individual Program, where a thesis proposal is submitted and approved as part of the student's application, before the end of the fourth semester in residence or the second registration in the thesis, the student will normally present a written thesis proposal to the pro-tem advisor or the chosen senior supervisor. Following consultation, the student will seek a second member to complete the supervisory committee. Once the thesis proposal is approved by the full supervisory committee, the student proceeds to complete the thesis. The thesis will be examined as prescribed in the Graduate General Regulations, sections 1.9 and 1.10.

PhD Comprehensive Examination
Students in a PhD program must write a comprehensive examination after completing required courses and before enrolling in EDUC 899 PhD Thesis. The examination consists of written responses to questions set by the student's proposed thesis
supervisory committee addressing three areas: theory, research methods, and the student's field of specialization. Students write the examination in a seven day period with the sole prohibition governing the examination being that the student may not consult with any person about the examination during the examination period.

Each of the student's responses to the areas examined is evaluated on a pass or fail basis by all members of the student's proposed thesis supervisory committee plus one other faculty member designated by the Director of Graduate Programs. Readers annotate the student's examination paper, fully justify their mark, and sign the examination paper. An area failed by two or more readers is considered a failed area. All three areas must be passed to receive a pass on the comprehensive examination.

Readers' marks will be returned to the Senior Supervisor of the student's supervisory committee within 10 working days from the close of the examination period. Within two working days thereafter, the Senior Supervisor will collate the results and communicate them to the Director of Graduate Programs who will notify the student. At the determination of the senior supervisor, an oral examination by the reading committee of the student's written responses may be required.

If the student passes the comprehensive examination but results indicate minor deficiencies in specific areas, the student will be required to remedy these to the satisfaction of the Senior Supervisor through further course work (such as a Directed Readings course). A student who fails one or more areas on a first comprehensive examination may take a second examination covering the failed area(s). Students will write the second examination in a 2-day period with the sole prohibition governing the examination being that the student may not consult with any person about the examination during the examination period. A student will be required to withdraw after a second failure of the comprehensive examination.

PhD Thesis

Normally before the end of the sixth semester in residence, the student will present a written thesis proposal to the pro-tem advisor or the chosen senior supervisor. Following consultation, the student will seek other members to complete the supervisory committee, which must consist of at least three members. A Thesis Proposal Seminar is then scheduled. Members of the candidate's supervisory committee attend this seminar, and they and the student arrange for other interested students and faculty to attend as well. The supervisory committee, along with the candidate, will review the future course of the thesis research in light of comments and criticisms forthcoming at this seminar.

Upon approval of the supervisory committee, the completed thesis will be examined as prescribed in the Graduate General Regulations, sections 1.9 and 1.10.

Programs of Study for a Masters Degree

Administrative Leadership

This program leads to the MA or MEd degree. It is a late afternoon-evening program offered to practising and prospective educational administrators. It is normally pursued as a general program that promotes the acquisition of the knowledge and skills needed to function effectively in increasingly complex educational settings.

Normally the following courses are considered as desirable core and elective courses in the administrative leadership program.

Core
EDUC 803-5 Educational Program Supervision
EDUC 813-5 Organizational Theory and Analysis in Education

Electives
EDUC 815-5 Administrative, Legal and Financial Bases of Education
EDUC 817-5 The Political and Social Environmental of Public Education
EDUC 818-5 Administrative Leadership of Educational Personnel
EDUC 830-5 Implementation of School Programs
EDUC 838-5 Judgment in Administrative Decision-Making
EDUC 863-5 Quantitative Methods in Educational Research
EDUC 864-5 Research Designs in Education
EDUC 867-5 Qualitative Methods in Educational Research Curriculum and Instruction


**Curriculum and Instruction**

This program leads to the MA or MEd degree. It is a late afternoon-evening program offered to students who wish to study current literature and research in education, and to use schools and classrooms as learning laboratories in which to apply and test this knowledge. The program also offers teachers opportunities to update their knowledge base in their subject or grade level, and fields of specialization. This program can be pursued as a general program or can focus on an area of specialization. Areas of specialization include, for example, French education, environmental education, learning disabilities, and reading. Each specialization area is defined by a particular selection and sequence of course work lodged within the general structure for graduate studies in curriculum and instruction.

Students are required to take at least three of the following courses. Only one of EDUC 863, 864 or 867 may be counted towards the three courses.

- EDUC 816-5 Developing Educational Programs
- EDUC 820-5 Educational Objectives and Teaching Strategies
- EDUC 821-5 Philosophical Issues in Classroom Practices
- EDUC 822-5 Evaluation of Educational Practice
- EDUC 823-5 Curriculum and Instruction in an Individual Teaching Speciality
- EDUC 830-5 Implementation of School Programs
- EDUC 863-5 Quantitative Methods in Educational Research
- EDUC 864-5 Research Design in Education
- EDUC 867-5 Qualitative Methods in Educational Research

Additional courses, which are core courses for different areas of specialization in curriculum and instruction, include some of the following.

- EDUC 804-5 Selected Problems in Educational Technology
- EDUC 811-5 Fieldwork I
- EDUC 819-5 Studies in Teacher-Student Interaction
- EDUC 826-5 The Reading Process
- EDUC 827-5 Conceptions of Giftedness
- EDUC 828-5 Instructional Practices in Reading
- EDUC 829-5 Contemporary Issues in Learning Disabilities
- EDUC 832-5 Teaching Composition: Research and Practice
- EDUC 851-5 Computer-based Learning
- EDUC 857-5 Issues and Topics in Environmental Education
- EDUC 858-5 Contemporary Research and Classroom Practices in French Immersion

**Arts Education**

This program leads to a Master of Education (MEd). Students may move to the MA after completing four courses.

Students are required to complete a minimum of 35 semester hours and a final comprehensive examination including the following.

**Foundational Studies**

all of

- EDUC 848-5 Ideas and Issues in Aesthetic Education
- EDUC 849-5 Artists, Society and Arts Education
- EDUC 850-5 Creativity and Education

**Curriculum Areas**

two of

- EDUC 852-5 Education and Dramatic Art
- EDUC 868-5 Curriculum Theory and Art Education
- EDUC 869-5 Music Education as Thinking in Sound
Electives
MEd students also choose two additional courses (one additional course for MA students) in consultation with arts faculty. One course may be selected from the graduate program offered by the School for the Contemporary Arts. These include the following.

FPA 811-5 Interdisciplinary Graduate Seminar I
FPA 883-5 Studio in FPA I
FPA 887-5 Selected Topics in Fine and Performing Arts
FPA 889-5 Directed Study in Fine and Performing Arts

One or both courses may be selected from the current offerings of the Faculty of Education instead.

The courses chosen must be justified by reference to the student's educational background, goals and to the relevance and coherence of the electives in relation to the rest of the program.

Comprehensive Examination
A final comprehensive exam is required for MEd students. A thesis is required for MA students.

Secondary Mathematics Education
This program leads to the MSc degree in the teaching of secondary school mathematics. It is offered jointly by the Faculty of Education and the Department of Mathematics and Statistics. The program is designed for a cohort of students commencing every second year. In addition to a thesis which will be supervised by a member of the Faculty of Education or the Department of Mathematics and Statistics, students are required to complete 25 semesters hours of the following coursework.

EDUC 844-5 The Research Basis of Mathematics Education
EDUC 846-4 Foundations of Mathematics Education
EDUC 847-4 Teaching and Learning Mathematics
MATH 603-4 Foundations of Mathematics
MATH 604-4 Geometry
MATH 605-4 Mathematical Modelling

Intermediate and Elementary Mathematics Education
This program leads to the MA or MEd degree. The program is intended to meet the needs of practising teachers, who have assignments in the elementary and intermediate grades. The requirements for the MA in Mathematics Education include course work with a minimum of 25 credit hours in education and mathematics and a Masters thesis (10 credits). MEd students are required to complete a minimum of 40 semester hours of which 25 are core courses, with a minimum of 15 hours of electives in education and/or mathematics and a comprehensive examination. After the first four program courses are completed, the student, in consultation with faculty members, will choose either the MA or MEd option.

Core Courses
EDUC 844-5 The Research Basis of Mathematics Education
MATH 845-4 Learning Mathematics with Computers
MATH 846-4 Foundations of Mathematics Education
MATH 847-4 Teaching and Learning Mathematics
MATH 601-4 Discovering Mathematics I
MATH 602-4 Discovering Mathematics II

Electives
The remaining courses are selected from graduate level courses in the Faculty of Education or in the Department of Mathematics and Statistics.

Counselling Psychology
This program leads to the MA or MEd degree. It is offered to students interested in careers as counsellors in schools, colleges, and community agencies. Students pursue a general program with opportunities for specialization provided in course work and field work.
Students in the counselling program are required to complete a minimum of 34 semester hours of course work and a thesis or project. All students must complete the core requirements listed in the following table. In addition, students must complete a minimum of two courses from methodology and/or specialization.

**Core**
- EDUC 811-5 Fieldwork I
- EDUC 812-5 Fieldwork II
- EDUC 862-3 Individual Assessment Procedures
- EDUC 863-5 Quantitative Methods in Educational Research
- EDUC 870-5 Theories of Counselling
- EDUC 874-3 Counselling Skills and Strategies

**Methodology**
- EDUC 822-5 Evaluation of Educational Practice
- EDUC 861-3 Educational Measurement Theory and Application
- EDUC 864-5 Research Designs in Education
- EDUC 865-5 Advanced Topics in Educational Data Analysis
- EDUC 867-5 Qualitative methods in Educational Research

**Specialization**
- EDUC 860-5 Contemporary Instructional Psychology
- EDUC 871-5 Family Counselling
- EDUC 873-5 Vocational Counselling
- EDUC 875-5 Therapeutic Instruction
- EDUC 876-5 Cognitive Intervention Research

**Psychology of Education**
This program leads to the MA degree. It is designed for students interested in studying theories, basic and applied research, and research method in the psychology of education. A brochure describing the program is available from the Graduate Programs Office, Faculty of Education. Students admitted to the MA program may apply to transfer to the PhD program in Psychology of Education upon successfully completing MA course work as described below and apply course credits and residence accumulated in the MA program to the PhD program. (See also section 1.7 of the Graduate General Regulations.) Students may apply for transfer credit if graduate work completed at another institution duplicates courses in this program.

**Core**
*Required courses*
- EDUC 840-0 Graduate Seminar
- EDUC 860-5 Contemporary Instructional Psychology
- EDUC 864-5 Research Designs in Education

*and one of*
- EDUC 863-5 Quantitative Methods in Educational Research
- EDUC 867-5 Qualitative Methods in Educational Research

**Theory**
*one of *
- EDUC 805-5 Selected Problems in Early Childhood Education
- EDUC 826-5 The Reading Process
- EDUC 827-5 Conceptions of Giftedness
- EDUC 829-5 Contemporary Issues in Learning Disabilities
- EDUC 847-4 Teaching and Learning Mathematics
- EDUC 851-5 Computer-Based Learning
- EDUC 870-5 Theories of Counselling
EDUC 970-5 Systems and Paradigms in the Psychology of Education
Application

one of
EDUC 811-5 Fieldwork I
EDUC 828-5 Instructional Practices in Reading
EDUC 871-5 Family Counselling
EDUC 873-5 Vocational Counselling
EDUC 875-5 Therapeutic Instruction
EDUC 876-5 Cognitive Intervention Research
EDUC 971-5 Advanced Topics in the Psychology of Education

Methodology
one of
EDUC 822-5 Evaluation of Educational Practice
EDUC 861-3 Educational Measurement Theory and Applications
EDUC 862-3 Individual Assessment Procedures
EDUC 863-5 Quantitative Methods in Educational Research
EDUC 865-5 Advanced Topics in Educational Data Analysis
EDUC 866-5 Advanced Qualitative Research in Education
EDUC 867-5 Qualitative Methods in Educational Research

Programs of Study for a Doctoral Degree

Arts Education
This program leads to the PhD degree. This program is designed for persons interested in becoming scholars and leaders in art education. Students are required to complete the following courses.

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 910-5 Directed Readings

Thesis
EDUC 899-10 PhD Thesis

Courses in research methodology may be required depending upon the student's research interests.

Curriculum Theory and Implementation
This program leads to the PhD degree. It requires successful completion of the following course work, amounting to a total of 20 semester hours credit beyond the requirements for the MA, MSc or MEd.

EDUC 901-5 Seminar in the History of Education 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

The supervisory committee may require further work in the Faculty of Education or other faculties. Students are strongly encouraged to draw additional courses from related departments outside the Faculty of Education.
Psychology of Education
This program leads to the PhD degree. It is designed for students interested in studying theories, basic and applied research, and research methods in the psychology of education. A brochure describing the program is available from the Graduate Programs Office, Faculty of Education. MA in Psychology of Education students may apply to transfer to the PhD program upon successfully completing MA course work and apply course credits and residence accumulated in the MA program to the PhD program. (See also section 1.7 of the Graduate General Regulations.) Students may apply for transfer credit if graduate work completed at another institution duplicates courses in this program.

Core
Required courses
EDUC 840-0 Graduate Seminar
EDUC 860-5 Contemporary Instructional Psychology
EDUC 863-5 Quantitative Methods in Educational Research
EDUC 864-5 Research Designs in Education
EDUC 865-5 Advanced Topics in Educational Data Analysis
EDUC 970-5 Systems and Paradigms in the Psychology of Education
EDUC 972-5 Colloquium in the Psychology of Education

and one of
EDUC 901-5 Seminar in the History of Educational Theory
EDUC 902-5 Interdisciplinary Seminar in Contemporary Educational Theory

Theory
one of
EDUC 805-5 Selected Problems in Early Childhood Education
EDUC 826-5 The Reading Process
EDUC 827-5 Conceptions of Giftedness
EDUC 829-5 Contemporary Issues in Learning Disabilities
EDUC 847-4 Teaching and Learning Mathematics
EDUC 851-5 Computer-Based Learning
EDUC 870-5 Theories of Counselling

Application
two of
EDUC 811-5 Fieldwork I
EDUC 828-5 Instructional Practices in Reading
EDUC 871-5 Family Counselling
EDUC 873-5 Vocational Counselling
EDUC 875-5 Therapeutic Instruction
EDUC 876-5 Cognitive Intervention Research
EDUC 971-5 Advanced Topics in the Psychology of Education

Methodology
two of
EDUC 822-5 Evaluation of Educational Practice
EDUC 861-3 Educational Measurement Theory and Applications
EDUC 862-3 Individual Assessment Procedures
EDUC 866-5 Advanced Qualitative Research in Education
EDUC 867-5 Qualitative Methods in Educational Research
### Graduate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>EDUC 702-2</td>
<td>Directed Readings</td>
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<tr>
<td>EDUC 703-3</td>
<td>Directed Readings</td>
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<td>EDUC 704-4</td>
<td>Directed Readings</td>
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<td>EDUC 705-5</td>
<td>Directed Readings</td>
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<tr>
<td>EDUC 710-3</td>
<td>Special Topics</td>
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<td>EDUC 711-3</td>
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<td>EDUC 712-3</td>
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<td>EDUC 713-3</td>
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<td>EDUC 714-3</td>
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<td>EDUC 720-3</td>
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<td>EDUC 721-3</td>
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<td>EDUC 722-3</td>
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<td>EDUC 723-3</td>
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<td>EDUC 724-3</td>
<td>Special Topics</td>
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<tr>
<td>EDUC 803-5</td>
<td>Educational Program Supervision</td>
<td>The course systematically examines school-based variables amenable to</td>
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<td>administrative manipulation and associated with student achievement.</td>
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<tr>
<td>EDUC 804-5</td>
<td>Selected Problems in Educational Technology</td>
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<tr>
<td>EDUC 805-5</td>
<td>Selected Problems in Early Childhood Education</td>
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<td>EDUC 806-5</td>
<td>Selected Problems in Higher Education</td>
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<tr>
<td>EDUC 809-5</td>
<td>Graduate Seminar</td>
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<tr>
<td>EDUC 811-5</td>
<td>Fieldwork I</td>
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<tr>
<td>EDUC 812-5</td>
<td>Fieldwork II</td>
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<tr>
<td>EDUC 813-5</td>
<td>Organizational Theory and Analysis in Education</td>
<td>Students examine relevant conceptual and empirical material drawn from the</td>
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<td>field of organizational theory, including the nature of formal and informal</td>
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<td>organizations, basic models in organizational analysis, organizational</td>
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<td>goals, organizational control, maintenance and change, decision making,</td>
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<td>communication and organizational effectiveness.</td>
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<td>EDUC 815-5</td>
<td>Administrative, Legal and Financial Bases of</td>
<td>Students examine the role of local, provincial and federal governments in</td>
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<td></td>
<td>Education</td>
<td>education in terms of administrative, legal and financial dimensions with</td>
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<td>emphasis on present delivery services, constraints and strategies.</td>
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</table>
EDUC 816-5 Developing Educational Programs
Students analyse theories and learn how to apply techniques for planning, developing, and implementing programs in schools and other institutions.

EDUC 817-5 The Political and Social Environment of Public Education
Students analyse the social and political structure of education in the light of political science theory, including the relationship of the school to the social structure.

EDUC 818-5 Administrative Leadership of Educational Personnel
Students examine the leadership role of the educational administrator as it relates to instructional program development, personnel selection and development, supervision and evaluation of teaching personnel, educational change and school evaluation, student personnel services and community relations.

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 Educational Objectives and Teaching Strategies
Focuses on the development of appropriate teaching strategies to achieve particular educational objectives.

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 Practice
Consideration of procedures used in educational evaluation; of published 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 English as a Second Language
Students examine the use of grammars in language teaching, linguistic influences on learner English, current models in English as a second language, and learning acquisition.

EDUC 825-5 Curriculum and Instruction in English as a Second Language
Students examine the principles underlying curriculum design and evaluation materials based on various teaching methods. Students will design curricula for non-native speakers of English.

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 or equivalent.

EDUC 827-5 Conceptions of Giftedness
Students will examine current conceptions of giftedness and factors that contribute to the development of extraordinary abilities. The implications for program planning will also be considered. Prerequisite: EDUC 428.

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. Prerequisites: EDUC 422 and 864.

EDUC 830-5 Implementation of School Programs
The problems and practices associated with innovation implementation. Among the concerns to be discussed are the nature of change in a schooling context; the roles of teachers, administrators, change agents, and evaluators during implementation problem solving processes and possible strategies for action.

EDUC 831-5 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/schooling/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 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 Seminar in Social and Moral Philosophy and 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 836-5 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 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 Western Perspectives on Childhood, Child-Rearing and Education
This course will consist of a study of origins of twentieth century concepts of childhood and their relationship to child-rearing and education in Europe and North America.

EDUC 840-0 Graduate Seminar

EDUC 841-3 Graduate Seminar

EDUC 844-5 The Research Basis of Mathematics Education
An examination of critical issues, current research and research practices in mathematics education.

EDUC 845-4 Learning Mathematics with Computers
Experience in incorporating computers in mathematical problem solving, adaptation of materials for use in intermediate mathematics classroom.
EDUC 846-4 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 847-4 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 Computer-Based Learning
Examines the roles of computers in education with an emphasis on computer based learning using microcomputers.

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 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 860-5 Contemporary Instructional Psychology
Critical analysis and synthesis of recent theoretical and empirical research in instructional psychology and cognate areas. Emphasis will be given to designing effective instructional environments using principles gleaned from behavioral, cognitive, and phenomenological perspectives.

EDUC 861-3 Educational Measurement Theory and Applications
Theories about measuring variables in education. Technical approaches to designing measuring instruments for norm-referenced and criterion-referenced contexts. Methods for identifying and relieving problems of measurements in education such as setting standards and bias in selection and classification. Students who have taken EDUC 872 in previous semesters may not take this course for credit.

EDUC 862-3 Individual Assessment Procedures
Methods for gathering and validly interpreting assessments of individuals in educational settings. Intelligence and achievement testing, interview methods, observational procedures, case study methodology. Students who have taken EDUC 872 in previous semesters may not take this course for credit.
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 865-5 Advanced Topics in Educational Data Analysis
Advanced methods for analysing multivariate data in educational research: concepts which underlie methods; frailties in methods and means for identifying them in analyses; using mainframe and microcomputer programs and interpreting output from them. Illustrations from educational research are used throughout. Prerequisites: EDUC 864 and 863.

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. Prerequisites: 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.

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 behaviour.

EDUC 870-5 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 871-5 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.

EDUC 873-5 Vocational Counselling
Provides a sound theoretical basis for career counselling activities. Major vocational theorists will be discussed along with relevant assessment considerations. Skill will be developed in such areas as utilizing community resources, obtaining vocational information, building a career information centre, job search techniques, and procedures for enhancing occupational placement.

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: consent of the instructor.

EDUC 875-5 Therapeutic Instruction
An exploration of the role of emotions in learning. The course will detail ways in which the affective domain can be accommodated in the context of teaching and learning to secure a holistic balance within the instructional framework. Prerequisite: EDUC 860.
EDUC 876-5 Cognitive Intervention Research
This course 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. Prerequisite: EDUC 860.

EDUC 881-5 Masters 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 semesters.

EDUC 883-0 MEd Comprehensive Examination
The comprehensive examination is the final evaluative component of the coursework/comprehensive MEd and is graded on a satisfactory/unsatisfactory basis.

EDUC 898-10 Masters 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 semesters.

EDUC 899-10 PhD Thesis

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 Apprenticeship
The apprenticeship is designed to provide the student with practical experience in scholarly inquiry in close cooperation 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 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 970-5 Systems and Paradigms in the Psychology of Education
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. Prerequisites: one of EDUC 826, 829, 860, 870 or equivalent graduate course.
EDUC 971-5 Advanced Topics in the Psychology of Education

EDUC 972-5 Colloquium in the 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.

Faculty of Science
Location: P9451 Shrum Science Centre
Telephone: 778.782.3771
Dean: C.H.W. Jones BSc, PhD (Manc) The Faculty of Science offers graduate programs in

Applied and Computational Mathematics
Aquaculture
Biological Sciences
Chemistry
Earth Sciences
Geography
Mathematics and Statistics
Molecular Biology and Biochemistry
Pest Management
Physics
Statistics

Admissions

Requirements for the MSc Degree
The minimum requirements for the Masters degree are those stated in the Graduate General Regulations. Any additional requirements imposed by the Supervisory Committee must be satisfied.

Individual departments may require additional courses at the graduate level.

Students who, in the opinion of the Supervisory Committee, lack certain prerequisites for graduate courses may be required to include some undergraduate courses in their programs.

Requirements for the PhD Degree
A PhD candidate must present a thesis embodying the results of his/her original research. In addition, the PhD program requires a minimum of 20 semester hours of course work beyond the BSc degree. Of these 20 hours, at least 15 are to be in graduate courses numbered in the 800's and the remaining 5 may be chosen from courses at the graduate or upper division undergraduate level within the candidate's department or an ancillary department.

These are minimum requirements within the Faculty. Individual departments may have additional requirements.
**Full-Time Study**

Full-time study for the MPM, MSc, MAq and PhD degrees normally is defined as a period of intensive work on the program, during which time not more than 20 hours of employment 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, refer to the Graduate General Regulations.

**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 members of the Committee must certify the results.

For further information and regulations, refer to the Graduate General Regulations.

**Research Facilities**

The research facilities are centered around some of the major areas of research interest and are set in modern laboratories and equipment for various analytical procedures are available.

The facilities include a Molecular Beam Epitaxy facility, a Bruker FTIR-GC system, a number of NMR machines including a Bruker AMX 600 superconducting high field facility for 1H and other nuclei, a Hewlett Packard 5985 GC mass spectrometer with data station, amino acid analyser facilities for DNA synthesis and automated DNA sequencing and quadrupole gas analyser. X-ray generators with vertical and full circle goniometers, various electron microscopes and high power lasers are available. There are also comprehensive machine, glassblowing and electronic workshops.

Biological research is enhanced by the availability of fresh and salt water aquarium facilities, insectary, extensive radioisotope facilities, an 11 metre research vessel, and various boat and vehicle transport systems. The Bamfield Marine Station, situated on the west coast of Vancouver Island, is available as a teaching and research facility for marine biology and oceanography. The Marine Station is operated jointly by the University of Alberta, University of British Columbia, University of Calgary, Simon Fraser University and the University of Victoria.

Experimental facilities are available at TRIUMF, a 500 MeV proton accelerator for the study, for example, of high energy nuclear reactions, muon chemistry and nuclear decay systems of exotic nuclei. TRIUMF is a joint venture of the University of Alberta, University of British Columbia, Simon Fraser University and the University of Victoria.

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**School of Communication**

**Faculty of Applied Sciences**

Location: 6135 Classroom Complex  
Telephone: 778.782.3687  
Director: B. Lewis, BA, (Hamilton Coll), MA, PhD (Iowa)

**Professor Emeritus**

T.J. Mallinson BA (Br Col), MA (Columbia U), PhD (Tor)

**Professors**

R.S. Anderson BA (Br Col), MA, PhD (Chic)  
R.S. Gruneau BA (Guelph), MA (Calg), PhD (Mass)  
P. Heyer BA (Sir G Wms), MA (New Sch Soc Res), MPhil, PhD (Rutgers)  
S. Kline BA (Tor), PhD (Lond)  
B. Lewis BA, (Hamilton Coll), MA, PhD (Iowa)  
R.M. Lorimer BA, MA (Manit), PhD (Tor), Director of Canadian Centre for Studies in Publishing
B.D. Truax BSc (Qu), M Mus (Br Col)*  
J.W. Walls BA, MA, PhD (Indiana)  
A. Wilden PhD (Johns H)  

Associate Professors  
P. Guild BA (Wat), MA (Carl), PhD (Oxf)  
R.A. Hackett BA (S Fraser), MA, PhD (Qu)  
L.M. Harasim BA, MA (Alta), PhD (Tor)  
M.P. Hindley BA (Leeds), MS (New Mexico Highlands)  
P.M. Howard BA, MA (Regina), PhD (S Fraser)  
M. Laba BA (York), MA, PhD (Nfld)  
C.A. Murray BA, MA (Wat), PhD (Qu)  
W.D. Richards, Jr. BA (Mich State), MA, PhD (Stan)  

Assistant Professors  
P.S. Anderson BGS, MA (S Fraser)  
A.C.M. Beale BA, MA, PhD (McG)  
G. Faurschou BA (Winnipeg), MA, PhD (York)  
R.K. Smith BA (Carleton), MA, PhD (S Fraser)  

Senior Lecturer  
D. Gutstein BArch, MArch (Br Col)  

*joint appointment with Contemporary Arts  

Advisors  
Ms. L. Menkveld, 6137 Classroom Complex, 778.782.3520  
Dr. W. Richards, 6141 Classroom Complex, 778.782.4119  

Faculty members on the school's Undergraduate Curriculum Committee are available for student consultations.  

Undergraduate courses  
Course descriptions for all Communication undergraduate courses.  

Faculty and Areas of Research  
The study of communication has recently emerged as an identified academic discipline. At the same time, a number of the traditional disciplines in the social sciences, the humanities, and the natural sciences employ communicational approaches in various areas. Communicational perspectives are also becoming prominent in the professions, notably in law, medicine, counselling, business, labor, education, trade, diplomacy, advertising, broadcasting, etc. As a social science, communication is distinctively trans-disciplinary.  

The school has drawn on a number of perspectives, but is most readily distinguished by the fact that it treats communication as a humanistic social science, and is concerned with the contexts within which information in all its diverse forms is created, coded, communicated, and controlled. This approach provides students with wide opportunities to explore both communication theory and communication practice, as well as the relationship between the two. It encourages the concrete application of theory and research to modern society, its historical origins, its dominant values, its institutions and policies, its present structure, its current problems and its potential for change.  

Refer to the graduate Communication section for faculty's areas of research.  

Program of Studies  
The School offers a specialized program leading to a Bachelor of Arts major or honors degree. It also offers a minor program and a variety of courses in Communication for students in other degree programs in the University.  

Students with a degree in Communication can seek employment opportunities in the following.
- management or research connected with communication industries, such as radio, television, book publication and telecommunications (courses in media production or journalism are not offered, however)
- research or policy development in government or industry related to the use of media, public information, public policy formation or the introduction of communications technologies in organizations or in international development
- research or development related to the field of marketing or advertising and social marketing (in conjunction with a specialization in business administration) or political communications
- public education, information or relations
- specialized research or production in acoustic and video communication

The School is interdisciplinary in its approach. It offers a concentrated program of study in a variety of fields. Course progressions in each of the topic fields are listed below for the guidance of students, but students are encouraged to take courses from more than one field of study in the School of Communication.

**Fields of Study**

Acoustic and electroacoustic communication (CMNS 258, 259, 358, 359)
Advertising and social marketing (CMNS 130, 223, 323, 426, 428)
Applied communication research (CMNS 260, 261, 362, 363)
Communication policy in media and information technology (CMNS 130, 230, 333, 334, 335, 433, 436, 438, 456, 458)
History and theory of communication (CMNS 110, 210, 224, 304, 310, 422)
International communication and development (CMNS 130, 345, 346, 444, 446, 448)
Interpersonal and intercultural communication (CMNS 205, 305, 423)
Journalism and news media analysis (CMNS 110, 130, 235, 331, 335)
Mass media/popular culture (CMNS 110, 130, 220, 221, 224, 320, 321, 421, 422, 428)
Network analysis (CMNS 201, 401, 408)
Political communication (CMNS 130, 224, 322, 331)
Political economy of communication (CMNS 130, 240, 444)
Technology, science and public policy (CMNS 130, 253, 342, 353, 442, 453, 454, 458)

**Enrollment Limitations**

Admission to the upper division of the major, minor, honors and related joint programs is limited. Space in upper division Communication courses is reserved for students who have been formally accepted into such a program; only such students will be able to obtain the upper division courses necessary to complete the program. Exceptions to this rule may be made by instructors in consultation with the director of the school.

With approval of the Dean of Applied Sciences office, the school will establish a yearly quota - the number of students that can be accommodated in the major/honors, joint major or minor programs. This quota will be established on the basis of projected available course space and school resources.

The school admits a limited number into its programs each semester, consistent with the overall quota, on the basis of minimum CGPA announced two semesters in advance of the Fall semester each year. This announcement will appear in the annual Student Guide to be published at the beginning of the calendar year. The school will determine this annual minimum requirement for entry on the basis of the number of places available. Every applicant for a major, minor or joint major program whose CGPA is greater than, or equal to, the annually announced requirement will be admitted; under normal circumstances admission to a program will not be granted to any applicant who has a CGPA which is less than the admission CGPA set by the school.

These requirements apply equally to a transfer or second degree student.

To remain in good standing in a program in Communication, a student will be expected to maintain the minimum CGPA of 2.25.
Major Program

Entry Requirements
In addition to the requirements of the University (see Admission and Readmission for details), students must have a minimum CGPA or transfer GPA of 2.25 and have completed, with a grade of C- or higher, CMNS 110 and 130, and four courses in Communication at the 200 level.

Graduation Requirements
Once approved for a specialization in Communication, a student will be required to maintain a minimum CGPA of 2.25 to maintain good standing in the program (that is, to retain eligibility to continue in the program). Students must also demonstrate competence in the specialized study of Communication by:

- completion of CMNS 110 and 130
- completion of four additional lower level courses in Communication (for a total of 18 lower level credit hours in Communication).
- completion of a course in basic science or social science methods (a list of approved course offerings is available from the School of Communication).
- completion of two courses in applied communication research, including one of CMNS 260 or 261, and one of CMNS 362 or 363.
- completion of 7 upper level (4 credit) courses in Communication. At least two of these shall be regularly scheduled 400 level offerings. Normally upper level courses may not be taken unless lower level course work has been completed, and normally 90 credit hours and the courses required in applied communication research must be taken prior to the 400 level courses.
- Directed Study and Field Placement courses may not be taken to meet the above mentioned requirement of seven upper level courses for a major in Communication.
- including these requirements, a major requires a minimum total of 28 upper level credit hours in Communication out of a total of 45 hours for the degree.
- to meet the requirements for a degree in Communication, at least 60 credit hours must be chosen from disciplines other than Communication.
- Students must include a minimum of
  - 12 semester hours chosen from Contemporary Arts, English, French, General Studies, History, Latin American Studies, Linguistics, Philosophy, or Spanish
  - two courses chosen from Biochemistry, Biological Sciences, Chemistry, Computing Science, Engineering Science, Environmental Science, Kinesiology, Mathematics, Statistics, Physics, one of which will be from the Faculty of Applied Sciences.
  - one upper level course (plus lower level prerequisites, if any) chosen from Archaeology, Business Administration, Canadian Studies, Criminology, Economics, Education, Geography, Political Science, Psychology, Sociology and Anthropology, Women's Studies.

Other Requirements Affecting Majors

Field Placement
Students register for field placement only after completing 20 Communication upper level credit hours and only with permission of the faculty member who will supervise the work. Registration in the field placement course is contingent upon a CGPA of 2.67. When supervisory resources are limited, priority will be given to students who have achieved the higher CGPA.

Directed Study
Registration in directed study is at the discretion of the faculty member who will supervise the work and generally will be contingent upon a cumulative GPA of 2.67. In cases where supervisory resources are limited, priority will be given to students with the higher cumulative GPA.

Communication Minor Program

Entry Requirements
In addition to the requirements of the University (see Admission and Readmission for details), students must have a minimum CGPA or transfer GPA of 2.25 and have completed, with a grade of C- or higher, CMNS 110 and 130.
Requirements
To graduate with a minor in Communication, a student must have fulfilled the following.

- completion of CMNS 110 and 130
- completion of four upper level courses in Communication. Directed Study and Field Placement courses may not be taken for credit towards the course requirements for a minor in Communication.

Publishing Minor Program

Entry Requirements
In addition to University requirements (see Admission and Readmission), students must have a minimum CGPA or transfer GPA of 2.25 and have completed, with a grade of C- or higher, lower level requirements for the Publishing Minor.

Note: CMNS courses taken for credit toward the Publishing Minor may not be counted as part of CMNS credit hours needed for a major or minor in Communication.

Lower Level Requirements
Four courses must be chosen from the following. No more than two courses from each discipline can be counted.

CMNS 110-3 Introduction to Communication Theory
CMNS 130-3 Explorations in Mass Communication
CMNS 230-3 Introduction to Communication Media
CMNS 240-3 The Political Economy of Communication
ECON 101-3 The Canadian Economy
ECON 103-3 Principles of Microeconomics
ECON 105-3 Principles of Macroeconomics
ENGL 210-3 Composition
ENGL 221-3 Canadian Literature
LING 100-3 Communication and Language
LING 110-3 The Wonder of Words
LING 260-3 Language, Culture, and Society

Upper Level Requirements
Four courses must be chosen from the following.
CMNS 335-4 The Newspaper Industry and Press Policy in Canada
CMNS 370-4 The Business of Publishing
CMNS 371-4 The Structure of the Book Publishing Industry in Canada
CMNS 372-4 The Publishing Process
CMNS 375-4 Magazine Publishing
CMNS 471-4 Selected Topics in Publishing
CMNS 472-4 Books, Markets and Readers
CMNS 473-4 Publication Design and Print Production
CMNS 478-4 Publishing Project Group
ENGL 388-4 The Author and the Book in Society

Communication Extended Minor Program

Admission Requirements

- completion, with a grade of C- or higher, of CMNS 110, 130 and four courses in CMNS at the 200 level. In addition, a minimum CGPA or transfer GPA of 2.25 is a prerequisite for acceptance to this program.
Graduation Requirements

- completion of the above-mentioned six courses, totalling 18 lower level credit hours.
- completion of a course in basic science or social science methods (a list of approved course offerings is available from the School of Communication).
- completion of two courses in applied communication research, including one of CMNS 260 or 261, and one of CMNS 362 or 363.
- completion of at least four upper level courses in Communication. Directed Study and Field Placement courses may not be taken for credit towards the course requirements for an extended minor in Communication.

Joint Major in Communication and Business Administration
See the Faculty of Business Administration section for requirements.

Joint Major in Communication and Latin American Studies
See the Department of Spanish and Latin American Studies for requirements.

Honors Program

Admission
Communication majors wishing to apply to the honors program should obtain the appropriate application form from the general office. The deadline for application submission is March 15th each year. In terms of course requirements, the main difference between the regular Communication program and the Honors program is that honors complete an honors project (described below). The application form requires the student to describe the proposed honors project and obtain the signatures of the chair of the Undergraduate Studies Committee, who must approve the project; a Communication faculty member who agrees to supervise the execution of the project; and one other faculty member who agrees to be on the student's supervisory committee.

The School reserves the right to limit the number of honors students if faculty resources are not available for supervision. In such cases, priority for registration in the honors program will be given to the students with a higher CGPA.

Students who have difficulty finding an honors supervisor should contact the school's undergraduate advisor for assistance.

Other admission requirements are as follows:

- a minimum GPA in Communication courses of 3.0
- successful completion of at least one of CMNS 260 or 261, and at least one of CMNS 362 or 363
- completion of 75 hours of course work with a minimum CGPA of 3.0
- approval and signature of a Communication faculty member willing to supervise the honors project.

Continuation
To remain in this program, students must maintain a minimum grade point average of 3.0 or higher for all courses (including Communication courses) taken in each semester. Students who do not meet this requirement may be dropped from the program but may apply for readmission at a later date.

Completion
To receive an honors in Communication, students must

- meet the graduation requirements for a degree in Communication
- meet the honors graduation requirements of the University and the Faculty of Applied Sciences
- successfully complete an honors project (CMNS 497 and 498)
- obtain certification by the Undergraduate Studies Committee that the program has been satisfactorily completed.
The Honors Project

Students must have completed at least 90 credit hours of university work with at least 20 credit hours in upper division Communication courses before enrolling in the honors project. A plan must be approved by the faculty supervisor and by the chair of the Undergraduate Studies program before work is begun. A pamphlet describing the requirements for the honors project can be obtained from the Communication General Office.

The honors project is carried out in two stages: CMNS 497 and 498. CMNS 497 will be offered every fall semester. Students may enroll in CMNS 498 in any semester subsequent to the one in which they complete CMNS 497.

Co-operative Education Program

Co-operative Education is a system which combines work experience with academic studies. The student spends alternate semesters on campus and in paid, study-related jobs.

Arrangements for the work experiences are made through the school's Co-op Co-ordinator and the University's Office of Co-operative Education. For further details, students should refer to the Co-operative Education section.

Communication Undergraduate Courses

Faculty of Applied Sciences

CMNS 110-3 Introduction to Communication Studies

An introduction to selected theories about human communication. This course is required for a major or minor in communication. This course is required for a major or minor in Communication. (Lecture/Tutorial)

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 or minor in Communication. (Lecture/Tutorial)

CMNS 201-3 Introduction to Human Communication Networks

An introduction to human communication/information networks. Topics include: cliques, isolates, liaisons, strong vs. weak ties; contacts and influence; societal cohesiveness; networks and power. (Lecture/Tutorial) Prerequisite: 30 credit hours.

CMNS 205-3 Introduction to Interpersonal Communication

An introduction to the study of interpersonal communication with emphasis on the ways in which relationships are circumscribed by the technological environment. (Lecture/Tutorial) Prerequisite: CMNS 110 or 130. Students with credit for CMNS 225 may not take this course for further credit.

CMNS 210-3 History of Communication

An assessment of the social implications of developments in information technology from prehistory to the beginning of the 20th century. Topics include: the origins of symbolic representation; the nature of language in preliterate society; the significance of different systems of writing and numeration; the consequences of print; and the initial changes brought about by electronic media. The general orientation will be towards exploring the relationship between technological and social change, and the cultural and psychological dimensions of literacy. (Lecture/Tutorial) Prerequisite: CMNS 110 or introductory course in social science theory strongly recommended.

CMNS 220-3 Understanding Television

This course examines television, both as a medium of communication and as an element of culture. (Lecture/Tutorial) Prerequisites: CMNS 110 or 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. (Lecture/Tutorial) Prerequisites: CMNS 110 or 130 recommended.
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. (Lecture/Tutorial) Prerequisite: CMNS 110 or 130 strongly recommended. Students with credit for CMNS 215 may not take this course for further credit.

CMNS 224-3 Social Issues and Communication  
This course introduces students to the foundations of interdisciplinary analysis for the study of communication by examining how social issues are represented within the media and popular culture. The course examines images and arguments that characterize debates over social issues such as poverty, sexuality, morality, crime and the economy. Several critical perspectives on how "common sense" understandings of social issues gain popularity in the media will be analysed in terms of the relationship of power to knowledge and of political economy to systems of representation and communication (Lecture/Tutorial) Prerequisites: at least 30 credit hours; one course in any of English, History, Philosophy, Contemporary Arts or Humanities; and one course in any of Sociology, Anthropology, Political Science, Psychology or Women's Studies. Strongly recommended: CMNS 110.

CMNS 230-3 Introduction to Communication Media  
Provides an overview of the development of broadcasting and telecommunication systems in Canada and their relationship to contemporary society. Topics covered include the history of the CBC, cable television, the domestic film production industry, Canadian satellite development, and alternative media in Canada. (Lecture/Tutorial) 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. (Lecture/Tutorial) 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, and the role of the mass media in determining local, national, and international policy. (Lecture/Tutorial) Prerequisites: CMNS 130; CMNS 230 strongly recommended.

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. (Lecture/Tutorial) Prerequisite: CMNS 110 or 130.

CMNS 258-3 Introduction to Electroacoustic Communication  
An introduction to the tape medium as a communicational tool and to electroacoustic aspects of communication in general. Specific techniques of field recording, interviewing, editing, tape transformations, sound object manipulation, and basic studio techniques will be presented and students will use the school's studio facilities. Applications of the tape medium to such areas as media analysis, aural history, social documentation, interpersonal communication, and tape music composition will be discussed. (Lecture/Laboratory)

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. (Lecture/Laboratory)

CMNS 260-3 Introduction to 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: paradigms, conceptualizing and operationalizing research, sampling, interviews, surveys, unobtrusive observation, content analysis, and the role of statistics in communication research. (Lecture/Tutorial) Prerequisite: CMNS 110 or 130. Students who have taken CMNS 250 when taught as Introduction to Empirical Communication Research Methods may not take CMNS 260 for further credit.
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. (Lecture/Tutorial) Prerequisite: CMNS 110 or 130. Students who have taken CMNS 361 may not claim further credit for this course.

CMNS 286-3 Selected Topic
Analysis of a particular topic in the general area of Communication. (Lecture/Tutorial) Prerequisites: CMNS 110 and 130. Students with credit for CMNS 250 may not take this course for further credit.

CMNS 304-4 Communication and the Language of 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. (Lecture/Tutorial) Prerequisite: one upper level course in Communication, or permission of the instructor.

CMNS 305-4 Interpersonal Communication in a Technological Environment
An examination of contemporary issues in interpersonal communication in specific contexts, especially family and friendship within the contemporary technological environment. (Lecture/Seminar) Prerequisite: CMNS 205. Students with credit for CMNS 325 may not take this course for further credit.

CMNS 310-4 Communication Thought in the Evolution of the Social Sciences
An examination of discussions of human communication in the social thought of the 18th and 19th centuries, including that of Rousseau, Monboddo, Marx, Darwin and Tylor. (Lecture/Tutorial) Prerequisite: CMNS 210.

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. (Lecture/Tutorial) Prerequisite: CMNS 220.

CMNS 321-4 The 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. (Lecture/Tutorial) Prerequisite: CMNS 221.

CMNS 322-4 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. (Lecture/Tutorial) Prerequisite: 45 or more credit hours; at least two lower division courses in Communication. CMNS 346 strongly recommended.

CMNS 323-4 Cultural Dimensions in Advertising
An examination of the way that advertisements use messages to build an elaborate system of meaning. Some cultural dimensions to be studied include fashion, industrial design and popular culture. (Lecture/Tutorial) Prerequisite: CMNS 223. Students with credit for CMNS 315 may not take this course for further credit.

CMNS 331-4 Political Communication
An examination of the role of the public and the media in shaping public debate. (Lecture/Tutorial) Prerequisites: CMNS 235 or permission of the instructor. CMNS 230 strongly recommended. The school maintains a current list of courses in Political Science and Sociology that are recommended for students taking CMNS 331-4. Students with credit for CMNS 341 may not take this course for further credit.

CMNS 333-4 Broadcasting Regulation and Policy in Canada
Examination of the laws, policies and regulations governing the Canadian broadcasting system (including cable television and satellites). (Lecture/Tutorial). Prerequisites: CMNS 230, 253 and 261.

CMNS 334-4 Cultural Policy
An analysis of the various facets of the cultural arts - film, video, art including photography, theatre and dance - concentrating primarily on the policies and laws affecting them. (Lecture/Tutorial) Prerequisite: CMNS 230 or permission of the instructor.
CMNS 335-4 The Newspaper Industry and Press Policy in Canada  
An analysis of the various facets of the Canadian newspaper industry, and of policies and laws that affect the press.  
(Lecture/Tutorial) Prerequisite: CMNS 235 or permission of the instructor. CMNS 230 and 261 strongly recommended.

CMNS 342-4 Science and Public Policy I: Risk Communication  
The course examines communication in the relation between science (technology) and public policy, and more particularly, in the evaluation of risk. (Lecture/Tutorial) Prerequisite: CMNS 261 strongly recommended.

CMNS 345-4 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. (Lecture/Tutorial) Prerequisites: CMNS 110 or 130 and completion of 60 credit hours.

CMNS 346-4 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. (Lecture/Tutorial) Prerequisites: 45 or more credit hours; at least two lower division courses in Communication. LING 260 and/or SA 101 strongly recommended.

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 semester to semester. (Lecture/Laboratory) Prerequisites: CMNS 253.

CMNS 358-4 Sound Tape Recording: Theory and Uses  
An intermediate level studio workshop to develop the student's skills in the tape medium and his/her understanding of the communicational implications of sound when processed in that medium. (Seminar/Laboratory) Prerequisite: CMNS 258.

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. (Seminar/Laboratory) Prerequisite: CMNS 259.

CMNS 362-4 Evaluation Methods for Applied Communication Research  
Evaluative techniques and research design for use in assessing the uses and consequences of the introduction of new media or technologies, technology transfer and new communication policies. (Lecture/Tutorial/Laboratory) Prerequisites: At least 60 credit hours, including CMNS 253, and one of CMNS 260 or 261.

CMNS 363-4 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. (Lecture/Tutorial) Prerequisite: one of CMNS 220, 221 or 223; and one of CMNS 260 or 261.

CMNS 370-4 The Business of Publishing  
This course examines business practices within publishing firms. It emphasizes financial planning and operations, acquisitions, marketing and promotion. (Lecture/Tutorial) Prerequisites: 60 credit hours and CMNS 372. Students who have taken BUS 493 or 495 as The Business of Publishing may not take CMNS 370 for further credit.

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. (Lecture/Tutorial) Prerequisites: CMNS 230; at least 75 credit hours. Students with credit for CMNS 470 may not take CMNS 371 for further credit.

CMNS 372-4 The Publishing Process
This course offers an overall view of the publishing process which transforms a manuscript into a book. Examined are the stages common to all publishing - editing, design, production and marketing - and the differences between different kinds of publishers. The contributions of modern computer technology are examined at each stage of the process. (Lecture/Tutorial) Prerequisite: 60 credit hours.

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. (Lecture/Tutorial) Prerequisite: 60 credit hours. Students who have taken CMNS 471 as Magazine Publishing may not take CMNS 375 for further credit.

CMNS 386-4 Special Topics in Communication
Intensive analysis of a particular topic in the general area of communication. (Seminar) Prerequisite: depends on topic; published before registration.

CMNS 395-0 Communication Practicum I
Work experience in the School of Communication's Co-operative Education Program. Prerequisites: Students must register with the Co-op Co-ordinator by the end of the third week of the semester preceding the work semester. Normally, students will have completed 28 semester hours and have a minimum GPA of 2.70. Credit is given as Pass/Withdraw (P/W).

CMNS 396-0 Communication Practicum II
The second semester of work experience in the School of Communication's Co-operative Education Program. Prerequisites: CMNS 395 and normally the completion of 42 semester hours, and a minimum GPA of 2.70. Credit is given as Pass/Withdraw (P/W).

CMNS 401-4 Issues in Communication Network Research
Advanced seminar to examine research in human communication/information networks. Topics include communication networks in organizations, the diffusion of innovations, social support networks, citation networks, and the relation between networks and communication technology. (Seminar) Prerequisites: 75 credit hours; either CMNS 201 and 260, or SA 355.

CMNS 408-4 Communication Network Project Group
An advanced workshop in network analysis focussed on applied research. (Laboratory) Prerequisites: two upper division CMNS courses and permission of the instructor.

CMNS 421-4 Issues Seminar
An advanced seminar on issues raised in studies of media. (Seminar) Prerequisites: at least 75 credit hours; CMNS 221 and 321 strongly recommended.

CMNS 422-4 Media and Ideology
An advanced seminar in media studies focussing upon theoretical debates about the allegedly ideological character of mass media and mass culture. Prerequisites: at least 75 credit hours including CMNS 221. CMNS 240, 323, 321 and SA 327 are strongly recommended.

CMNS 423-4 Negotiation 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. (Lecture/Seminar) Prerequisites: one of CMNS 322 or 346.
CMNS 426-4 Communication Design for Non-Broadcast Video
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. (Seminar/Lab) Prerequisites: CMNS 220, 221 plus two of 323, 320, 363.

CMNS 428-4 Media Analysis Project Group
An advanced workshop in media analysis focussed on applied research. (Laboratory) Prerequisites: two upper division CMNS courses and permission of instructor.

CMNS 433-4 Issues in Communication Policy
Advanced seminar on current issues in communication policy. (Seminar) Prerequisites: CMNS 333 required. CMNS 261 strongly recommended.

CMNS 436-4 Telecommunication Regulation in North America
Development of the theory and practice of regulation of the telecommunications industry in Canada and the USA. (Lecture/Tutorial) Prerequisites: at least 75 credit hours; CMNS 230, 240 and 333. Students with credit for CMNS 448 prior to 94-3 may not take this course for further credit.

CMNS 438-4 Communication Policy Project Group
An advanced workshop in communication policy in media and information technology focussed on applied research. (Laboratory) Prerequisites: two upper division CMNS courses and permission of the instructor.

CMNS 442-4 Science and Public Policy II: Standards
To examine the origination, implementation and enforcement of standards. Standards to be examined include: communication standards, standards used in risk evaluation of environmental and occupational hazards and standards used in technology assessment. (Lecture/Seminar) Prerequisite: CMNS 261. CMNS 342 strongly recommended.

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. (Seminar) Prerequisites: CMNS 240 or permission of the instructor; at least 75 credit hours.

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. (Lecture/Seminar) Prerequisites: at least 75 credit hours including CMNS 345; CMNS 362 and 346 strongly recommended.

CMNS 448-4 International Communication Project Group
An advanced workshop in international communication and development focussed on applied research. (Laboratory) Prerequisites: two upper division CMNS courses and permission of the instructor.

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. (Lecture/Seminar) Prerequisites: CMNS 253 and at least 75 credit hours; prerequisite of CMNS 253 may be waived by permission of instructor.

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. (Lecture/Seminar) Prerequisite: CMNS 253 or 353 is strongly recommended.
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 (Seminar/Lab) Prerequisites: one of CMNS 230, 253 or 353. Students who have taken CMNS 433 when taught as Communication to Mitigate Disasters may not take CMNS 456 for further credit.

CMNS 458-4 Information Technology Project Group
An advanced workshop in applied information technology and its evaluation focussed on applied research. (Laboratory) Prerequisites: two upper division CMNS courses and permission of instructor.

CMNS 471-4 Selected Topics in Publishing
An in-depth analysis of selected facets of book and related publishing activities such as literary publishing, publishing for children, electronic publishing, the history of print, editing, book design, magazine publishing, etc. The course will build directly upon CMNS 371-4. (Seminar) Prerequisites: CMNS 371 and 372.

CMNS 472-4 Books, Markets and Readers
This course will examine the major markets for the sale of books, book buying and book reading. Special emphasis will be placed on popular genres and successful authors and outlets such as independent and chain bookstores, book clubs, libraries and specialty stores. (Seminar) Prerequisites: 60 credit hours, CMNS 372. Students who have taken CMNS 471 (Selected Topics in Publishing as Books, Markets and Readers) may not take CMNS 472 for further credit.

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 focusses on magazines, books and electronic formats. Creative, marketing and managerial issues will all be explored. (Lecture/Lab) Prerequisites: CMNS 372 plus 60 hours.

CMNS 478-4 Publishing Project Group
An advanced workshop in publishing analysis or design focussed on applied research. (Laboratory) Prerequisites: two upper division CMNS courses and permission of the instructor.

CMNS 480-2 Directed Study
Independent reading and research on topics selected in consultation with the supervising instructor. Prerequisites: two upper division CMNS courses and consent of instructor. No more than 10 hours of directed study may be taken.

CMNS 481-3 Directed Study
Independent reading and research on topics selected in consultation with the supervising instructor. Prerequisites: two upper division CMNS courses and consent of instructor. No more than 10 hours of directed study may be taken.

CMNS 482-4 Directed Study
Independent reading and research on topics selected in consultation with the supervising instructor. Prerequisites: two upper division CMNS courses and consent of instructor. No more than 10 hours of directed study may be taken.

CMNS 483-5 Directed Study
Independent reading and research on topics selected in consultation with the supervising instructor. Prerequisites: two upper division CMNS courses and consent of instructor. No more than 10 hours 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. (Seminar) Prerequisites: permission of the instructor.

CMNS 489-4 Field Placement
For students who have at least 24 upper level credit hours 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 enrollment will depend upon the availability of faculty resources in any semester. Prerequisites: 75 credit hours and permission of the school. Students with credit for CMNS 439 may not take this course for further credit.

CMNS 494-0 Communication Practicum III
The third semester of work experience for students in Communication's Co-operative Education Program. Prerequisites: CMNS 396 and normally 56 semester hours, and a minimum GPA of 2.70. Credit is given as Pass/Withdraw (P/W).

CMNS 495-0 Communication Practicum IV
The last semester of work experience for students in Communication's Co-operative Education Program. Credit is awarded as in CMNS 395, 396, or 494. Prerequisites: CMNS 494 and a minimum GPA of 2.70. Credit is given as Pass/Withdraw (P/W).

CMNS 496-0 Communication Practicum V
Optional semester of work experience for students in Communication's Co-operative Education Program. Prerequisites: CMNS 495 and a minimum GPA of 2.70. Credit is given as Pass/Withdraw (P/W).

CMNS 497-5 Honors Research Proposal
Presentation and discussion in a seminar format of honors student research projects and colloquia of interest. Course may be offered on a pass/fail basis. (Seminar) 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 either group or individual research project under the direct supervision of a faculty member who will provide guidance and critical feedback as necessary. Prerequisites: Students seeking an honors in Communication and registering for the individual study semester must apply to the Chair of the Undergraduate Committee two months prior to the semester in which the individual study semester will be undertaken (normally in conjunction with the application for entry into the honors program). The proposal must outline the scope of the research to be undertaken and the assignments to be completed. The supervisory committee for the individual study semester must be made up of three faculty, two of whom must be in the School of Communication.

School of Computing Science

Faculty of Applied Sciences
Location: 9971 Applied Sciences Building
Telephone: 778.782.4277; 778.782.3045 Fax
Director: W.S. Luk BA (Lond), MSc (Wat), PhD (Alta)

Professors Emeriti
R. Harrop BA, MA, PhD (Camb)
T.D. Sterling AB, MA (Chic), PhD (Tulane)

Professors
H. Ait-Kaci MSE, PhD (Penn)
B.K. Bhattacharya MSc (Cal), MS, PhD (McG)
F.W. Burton BSc, MA (Colorado), PhD (E Anglia)
T.W. Calvert BSc (Eng) (Lond), MSEE (Wayne), PhD (Carnegie Tech), PEng* **
N. Cercone BSc (Steubenville), MS (Ohio), PhD (Alta)
V. Dahl MSc (Buenos Aires), PhD Aix-Marseilles I, Dipl d'Et App Aix-Marseilles II
B.V. Funt BSc, MSc, PhD (Br Col)
P. Hell MSc (McM), PhD (Montr),***
T. Kameda BS, MS (Tokyo), PhD (Prin)
A.L. Liestman BGS (Kansas), MS, PhD (Ill)
W.S. Luk BA (Lond), MSc (Wat), PhD (Alta), Director of School
J.J. Weinkam BS (Xavier, Ohio), MS (Chic), DSc (Wash)
Associate Professors
M.S. Atkins BSc (Nott), MPhil (Warw), PhD (Br Col)
R.D. Cameron BASc, PhD (Br Col)
J.P. Delgrande BSc, MSc, PhD (Tor)
R.F. Hadley BA (Virginia), MSc (S Fraser), PhD (Br Col)
L. Hafer BSEE, MS, PhD (Carnegie-Mellon)
J. Han Diploma (China), MS, PhD (Wisc)
W.S. Havens BSc, MSc (Va Polytechnic Inst), PhD (Br Col)*
R.F. Hobson BSc (Br Col), PhD (Wat)
R. Krishnamurti B Tech (IIT Madras), PhD (Penn State)
Z.N. Li BS (Beijing), MS, PhD (Wisc)
J.G. Peters BMath (Wat), MSc, PhD (Tor)
F. Popowich BSc (Alta), MSc (S Fraser), PhD (Edin)
S. Pilarski MS, PhD (Poland)
T.C. Shermer BES (Johns H), PhD (McG)

Assistant Professors
F.D. Fracchia BSc (Regina), MSc (Wat), PhD (Regina)
A. Gupta BSc (McM), MSc, PhD (Tor)
P. Triantafillou BA (York), MSc (W Ont), PhD (Wat)

Adjunct Professors
J.G. Rogers BS (MIT), PhD (Calif)
R.J. Sutcliffe BSc, MSc (S Fraser)
F. Swinkels BS, MSc (Holland), MSc (S Fraser), PhD (Qu)

Senior Lecturers
P.M. Brearley BSc, MSc (S Fraser)
A.H. Dixon BSc, MSc, PhD (Br Col), Assistant to the Director
M.S. Drew BASc, MSc (Tor), PhD (Br Col)
M.D. Evans BSc, MA (Dal), MSc (Dund), MSc (Birm)
D. Godwin BCom (Car), Director of Co-operative Education

Associate Members
J. Borwein: Mathematics and Statistics
P. Borwein: Mathematics and Statistics
J.C. Dill: Engineering Science
R.D. Russell: Mathematics
M. Trummer: Mathematics

Lab Instructor
R.J. Tront BSc (Vic, BC), MAsc (Br Col)

*joint appointment with Engineering Science
**joint appointment with Kinesiology
***joint appointment with Mathematics and Statistics

Advisor
Mrs. E. Krbavac, 9985 Applied Sciences Building, 778.782.4675

The School of Computing Science offers BSc and BA degree programs in Computing Science and contributes to a wide variety of programs that combine studies in Computing Science with studies in other academic disciplines. Formal joint programs include the Joint Major in Information Systems in Business Administration and Computing Science, the Mathematics and Computing Science Joint Honors Program, the Cognitive Science Program (in co-operation with the Departments of Linguistics, Philosophy, and Psychology), and the Management and Systems Science Program (in co-operation with the Department of Mathematics and Statistics, the Department of Economics, and the Faculty of Business Administration). The school also offers a minor program that may be taken in conjunction with other major or honors programs or a general degree program.
Undergraduate courses
Course descriptions for all Computing Science undergraduate courses.

Co-operative Education
Co-operative Education is a system which combines work experience with academic studies. The student spends alternate semesters on campus and in paid, study-related jobs.

Arrangements for the work experiences are made through the school's Co-op Co-ordinator and the University's Office of Co-op Education. For further details, students should refer to the Co-operative Education section.

Minimum Grade Requirement
Students are expected to obtain a grade of C or higher in their courses, as they normally will not be permitted to enroll in any Computing Science course for which a C- grade or lower was obtained in any prerequisite. A minimum CGPA of 2.25 is required for entry into upper level computing courses.

Enrollment Limitations
Admission to the upper division courses for major, minor, honors and related joint programs is limited. Space in upper division Computing Science courses is primarily reserved for students who have been formally accepted into such a program; only such students will be generally able to obtain the upper division courses necessary to complete the program.

Program admission is based both on overall academic performance as measured by the CGPA and on specific academic performance in computing-related material as measured by the computing-related GPA for declaration in the given program. The CGPA is calculated on all Simon Fraser University work as described in the General Regulations. The computing-related GPA for a given program is the GPA calculated on all courses used for the lower division requirements of that program and any other CMPT courses taken. Only courses taken at Simon Fraser University are used in these calculations.

A student may apply for formal acceptance as a declared student in any one of these programs involving Computing Science upon completion of 57 semester hours including the lower division course requirements for the program. For direct admission based on CGPA and on computing-related GPA the student must have completed at least 12 semester hours of the computing related courses at Simon Fraser University. Applications must be submitted by the fifth day of classes for admission consideration in that semester.

The school admits a limited number. After the closing date for admissions each semester, the school determines a semester admission GPA based on the number of places available and subject to the Dean's approval. (In previous semesters the admission CGPA was 2.60.) Every applicant for a Computing program whose CGPA and computing-related GPA are both greater than or equal to the admission GPA will be admitted. Admission to a program will not be granted to any applicant who has either a CGPA or a computing-related GPA for the program which is less than the semester admission GPA.

A transfer or second degree student who has not completed at least 12 credits of computing-related courses, but who has at least 57 hours of overall credit and all lower division program requirements may apply for special admission consideration based on transcripts from other post-secondary institutions.

To remain in a program in Computing Science a student will be expected to maintain at least the minimum CGPA of 2.25.

Major and Honors Programs
These programs are organized so that students may take advantage of a number of options. Among these are preparation for employment in computer related positions in government, business, or industry, and for Computing Science graduate studies or a related area. A Computing Science undergraduate degree also is an appropriate preparation for other areas where computers play a major role, especially business administration, economics, and science.

Lower Division Requirements
Students who plan to undertake a major, or honors in Computing Science must obtain credit for the following lower division courses (or equivalents).
one of
CMPT 101-4 Modula 2
CMPT 104-2 Introduction to Modula 2 as a Second High Level Programming Language

plus all of
CMPT 105-3 Fundamental Concepts of Computing
CMPT 201-4 Data and Program Organization
CMPT 275-4 Software Engineering
CMPT 290-3 Introduction to Digital Systems
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 Elementary Linear Algebra
PHIL 001-3 Critical Thinking
PHIL 214-3 Axiomatic Logic
STAT 270-3 Introduction to Probability and Statistics I
(40-42 semester hours)

Notes
Approval of calculus courses in place of MATH 151 or 152 will be based on corresponding approval within the Mathematics and Statistics Department.

Any 100 level English course may alternatively be used to satisfy the requirement for PHIL 001. A grade of C- or better is required in PHIL 001 or its alternative.

The GPA calculated over all Simon Fraser University courses used to fulfill the above requirements plus any other CMPT courses taken is called the computing-related GPA for declaration of a Computing Science major or honors and is used in determining admission to these programs.

It is recommended that students with normal entry complete the above courses within the first four semesters.

Upper Division Requirements
Major and honors students are required to consult an advisor before commencing their upper division course requirements.

The primary upper division requirements for a major or honors are structured according to the areas of concentration shown in table I. Elective courses that may be used to fulfill further requirements are shown in tables II and III.

Table I - Computing Science Concentrations
Artificial Intelligence
CMPT 410-3 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 419-3 Special Topics in Artificial Intelligence

Computer Design and Organization
CMPT 390-3 Digital Circuits and Systems
CMPT 391-3 Microcomputer Hardware Workshop
CMPT 400-3 High-Performance Computer Architecture
CMPT 490-3 VLSI Systems Design
CMPT 495-3 Digital Systems Design and Specification Project
CMPT 496-3 Digital Systems Implementation Project
CMPT 499-3 Special Topics in Computer Hardware
Computer Graphics
CMPT 361-3 Introduction to Computer Graphics
CMPT 363-3 User Interface Design
CMPT 461-3 Advanced Computer Graphics
CMPT 468-3 Scientific Visualization
CMPT 469-3 Special Topics in Computer Graphics

Computing Systems
CMPT 300-3 Operating Systems I
CMPT 371-3 Data Communications and Networking
CMPT 401-3 Operating Systems II
CMPT 402-3 Operating System Software Laboratory
CMPT 479-3 Special Topics in Computing Systems

Information Systems
CMPT 301-3 Information Systems Management
CMPT 302-3 System Development Projects
CMPT 354-3 Database Systems I
CMPT 370-3 Information System Design
CMPT 454-3 Database Systems II
CMPT 459-3 Special Topics in Database Systems

Programming Languages and Software
CMPT 383-3 Comparative Programming Languages
CMPT 384-3 Symbolic Computing
CMPT 480-3 Foundations of Programming Languages
CMPT 481-3 Functional Programming
CMPT 487-3 Software Engineering Tools and Environments
CMPT 489-3 Special Topics in Programming Languages

Theoretical Computing Science
CMPT 307-3 Data Structures and Algorithms
CMPT 405-3 Design and Analysis of Computing Algorithms
CMPT 406-3 Computational Geometry
CMPT 407-3 Computational Complexity
CMPT 409-3 Special Topics in Theoretical Computing Science
MACM 300-3 Introduction to Formal Languages and Automata with Applications

Table II - Intensive Application Courses
CMPT 305-3 Computer Simulation and Modelling
CMPT 340-3 Computers in Biomedicine

Table III - Computing Mathematics Courses
MACM 316-3 Numerical Analysis I
MATH 308-3 Linear Programming
MATH 343-3 Combinatorial Aspects of Computing
MATH 408-3 Discrete Optimization
MATH 416-3 Numerical Analysis II

Upper Division Requirements for a Major
For a major, students must satisfy the following requirements.

Breadth Requirement
One course each in five areas of table I must be completed. These courses must include CMPT 300 and 307. CMPT 354 is recommended.
(15 semester hours)

Depth Requirement
Four additional courses from table I must be completed in the five areas chosen to satisfy breadth requirements. At least two of these courses must be numbered CMPT 400 or above. (12 semester hours)

Further course requirements for a major in Computing Science depend on the degree sought, as follows.

- 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, bringing the total upper division semester hours in CMPT courses to at least 30.
- For a BA degree with a major in Computing Science, the following additional requirements must be met.
  - one additional CMPT course chosen from table I or table II must be completed bringing the total upper division semester hours in CMPT courses to at least 30.
  - a concentration of 15 semester hours in a discipline (department) within the Faculty of Arts must be completed. This concentration must include at least six semester hours of upper division credit.
- For a BSc degree with a major in Computing Science, the following additional requirements must be met.
  - three additional courses chosen from tables I, II or III must be completed. These courses must include MACM 316. (9 semester hours)
  - Social Aspects of Computing Requirement: Completion of an approved course dealing with computing from a social perspective is required. Any of the following courses may be used to meet this requirement: CMPT 320-3 Social Implications of a Computerized Society CMNS 353-4 Social Contexts of Information Technology (3 semester hours)
    Other courses may be approved on submission of a detailed course outline to the school.
  - Computing Presentation Requirement: One of CMPT 428 or 493 must be completed.
  - Liberal Arts Electives
    At least nine semester hours (at any level) from the list of courses approved for credit toward a Certificate in Liberal Arts excluding the areas 1. Verbal Skills, 10. Natural Science, 11. The Impact of Science and Technology, and 12. Quantitative Skills. This list is published annually. Copies may be obtained from the Office of the Dean of Arts, or Academic Resource Office. Please note that a course taken to satisfy the Social Aspects of Computing requirement may not simultaneously be used to satisfy this requirement.

- For all major programs in Computing Science, a grade point average of 2.0 must be obtained on the 30 to 40 semester hours of upper division CMPT/MACM/MATH courses used to fulfill the above requirements.

For all major programs in Computing Science, at least 24 semester hours of the required CMPT courses must be taken at Simon Fraser University.

For a major in Computing Science, 120 semester hours must be completed, with an overall minimum of 45 semester hours of upper division credit.

For all Computing Science major programs, at least 30 hours of upper division CMPT courses must be counted towards the major and cannot at the same time be counted towards the credit hour requirements of any other program.

Students are advised to consult the General Information section of this calendar governing university graduation requirements.

**Upper Division Requirements for Honors**
For a BA or BSc degree with honors in Computing Science, students must fulfill the corresponding requirements for a BA or BSc major in Computing Science, with the following modifications and additions.

**Breadth Requirement**
One course each in the seven areas of Table I is required. These courses must include CMPT 300, 307 and 354.
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.

Credit Hour Requirement
Additional Computing Science courses must be completed to bring the total upper division credit hours in CMPT/MACM to at least 50.

In addition, a minimum of 60 upper division semester hours and an overall total of 132 hours are required for the degree, together with a graduation grade point average of at least 3.00 as described in the General Information section.

Minor Program

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 101-4 Modula 2
CMPT 104-2 Introduction to Modula 2 as a Second High Level Programming Language

one of
CMPT 275-4 Software Engineering
CMPT 290-3 Introduction to Digital Systems

plus all of
CMPT 105-3 Fundamental Concepts of Computing
CMPT 201-4 Data and Program Organization
MACM 101-3 Discrete Mathematics I
MATH 151-3 Calculus I
PHIL 001-3 Critical Thinking
(24 semester hours)

Notes
Approval of a calculus course in place of MATH 151 will be based on corresponding approval within the Mathematics Department.

Any 100 level English course may alternatively be used to satisfy the requirement for PHIL 001. A grade of C- or better is required in PHIL 001 or its alternative.

The GPA calculated over all the Simon Fraser University courses used to fulfill the above requirements plus any other CMPT courses taken is called the Computing related GPA for declaration of a minor in Computing Science and is used in determining admissions to the Computing Science minor program.

Upper Division Requirements
For a minor, students must complete the following requirements.

- three courses chosen from the Computing Science upper division core courses listed in table I must be completed (9 semester hours).
- two additional CMPT courses chosen from table I or table II must be completed (6 semester hours).
- no more than three courses from any one area of table I may be counted towards the above 15 semester hours of credit.
- at least 12 semester hours of these courses must be completed at Simon Fraser University.
Joint Major in Information Systems in Business Administration and Computing Science
In co-operation with the Faculty of Business Administration, the school offers a joint major in Information Systems in Business Administration and Computing Science. See the Faculty of Business Administration section for course requirements. Upon completion of the requirements, students may choose either a BBA degree as offered by the Faculty of Business Administration or a BA degree offered by the School of Computing Science.

A BSc degree is also available in the joint major with the completion of the following requirements in addition to those listed in the Business Administration section. Three additional courses chosen from tables I, II or III must be completed. These courses must include MACM 316.

Mathematics and Computing Science Honors Program
This program is offered jointly with the Department of Mathematics and Statistics. Entry requires permission of both the department and the school. See the Mathematics and Computing Science Program section.

Cognitive Science Program
In co-operation with the Departments of Linguistics, Philosophy and Psychology, the School of Computing Science contributes to the undergraduate degree program in Cognitive Science, leading to a BA degree. For more details about the requirements, see Cognitive Science in the Faculty of Arts section.

Management and Systems Science Program
In co-operation with the Department of Mathematics and Statistics, the Department of Economics and the Faculty of Business Administration, the school contributes to this program in Management and Systems Science, leading to a BSc degree. For more details about the requirements, see Management and Systems Science in the Faculty of Science section.

Post Baccalaureate Diploma in Computing Science
Admission to a Post Baccalaureate Diploma in Computing Science is available for students who have already completed a Bachelors degree. For information about the program's general regulations, refer to Continuing Studies.

Requirements
All students must complete an approved program consisting of at least 30 credit hours which include the following.

CMPT 300-3 Operating Systems I
CMPT 307-3 Data Structures and Algorithms
CMPT 354-3 Database Systems and Structures

- additional upper division Computing Science courses and/or Computing Science graduate courses (with instructor's consent) totalling at least 12 credit hours
- any other upper division courses listed in the Simon Fraser University Calendar to bring the total to at least 30 credit hours.

Courses must be selected in consultation with a program advisor so that the student achieves a coherent program of study. The student is responsible for satisfying the prerequisites of courses in the program. This may entail taking more or all courses listed in the lower division requirements of the Major in Computing Science (depending upon the student's prior transcript).

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.

Admission is governed by Simon Fraser University admission regulations.

Program Requirements
The Certificate in Computing Studies requires completion of 29 credit hours of required course work and electives, as follows.
Required Courses
CMPT 098-3 Computers, Applications and Programs
CMPT 105-3 Fundamental Concepts of Computing
CMPT 201-4 Data and Program Organization
CMPT 275-4 Software Engineering
MACM 101-3 Discrete Mathematics I
MATH 151-3 Calculus I

and one of
CMPT 101-4 Modula 2
CMPT 104-2 Introduction to Modula 2 as a Second High Level Programming Language

Elective Courses
two of
CMPT 111-1 Introduction to an Additional Programming Language - COBOL
CMPT 112-1 Introduction to an Additional Programming Language - C
CMPT 113-1 Introduction to an Additional Programming Language - PL/1
CMPT 114-1 Introduction to an Additional Programming Language - FORTRAN
CMPT 115-1 Introduction to an Additional Programming Language - PASCAL
CMPT 116-1 Introduction to a Second Programming Language: SMALLTALK
plus one additional three credit CMPT course at the 300 level.

Notes
CMPT 098 may be waived for those with appropriate background.

At least 10 credit hours of the CMPT courses required for this program must be completed at Simon Fraser University.

A grade point average of 2.0 is required on the courses used for this certificate. Only courses taken at Simon Fraser University are used in this calculation.

Computing Science Undergraduate Courses

Faculty of Applied Sciences
See also courses listed under Mathematics and Computing Science (MACM).

CMPT 001-3 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. (Lecture/Laboratory) 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 098-3 Computers, Applications and Programs
An introduction to computers, computing systems, application programs and programming. The course emphasizes principles of computing science and is intended for those wishing to major in Computing Science or a related program. (Lecture/Laboratory) Prerequisites: 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. (Lecture/Laboratory) Prerequisites: BC Math 12 or
MATH 100 or MATH 110. Students who have taken CMPT 100 and who wish to continue in Computing Science must take CMPT 098 for duplicate credit. Students who have taken CMPT 101, 102, or 103 may not take CMPT 100 for further credit.

CMPT 101-4 Modula 2
An intensive introduction to Modula 2 for the student with considerable previous computing experience. Review of fundamental programming concepts, including integer and real numbers as data objects, variables, assignment, conditional statements and loops. The concept of an algorithm. Structured programming using sub-programs, recursion, modules and libraries. Structured data objects including arrays, strings and records. Program and user documentation. (Lecture/Laboratory) Prerequisite: CMPT 098 and MATH 100. CMPT 098 is waived for those with a minimum grade of B in BC High School Computer Science 12 or equivalent computing experience with Pascal. MATH 100 is waived for those with a minimum grade of B in BC High School Algebra 12. Students with credit for CMPT 102, 103 or 104 may not take CMPT 101 for further credit.

CMPT 102-3 Introduction to FORTRAN for Science Students
A programming course which will provide the Science student with a working knowledge of the FORTRAN language and an introduction to computing concepts, structured programming, and modular design. The student will also gain some knowledge of the FORTRAN computing environment including the use of numerical algorithm packages. (Lecture/Laboratory) Corequisite: MATH 152 or 155 (or 158). Students with credit for CMPT 101, 103 or 114 may not take CMPT 102 for further credit.

CMPT 103-3 Introduction to PASCAL Programming
Introduces the student to a high level programming language. The programming assignments cover techniques such as looping, decision-making, construction of subroutines, input/output handling and documentation. (Lecture/Laboratory) Prerequisite: BC High School Algebra 12 (or equivalent) or MATH 100. Students with a grade of B or higher in BC high school Computer Science 12, or those with credit for CMPT 101, 102 or 115 may not take CMPT 103 for further credit.

CMPT 104-2 Introduction to Modula 2 as a Second High Level Programming Language
This course is intended for students who may not take CMPT 101 because they already have credit for CMPT 102 or 103. The course includes a review of the concept of an algorithm and structured programming using sub-programs, modules, recursion, and structured data objects. (Lecture/Laboratory) Prerequisite: CMPT 102 or 103. Students with credit for CMPT 101 may not take CMPT 104 for further credit.

CMPT 105-3 Fundamental Concepts of Computing
Introduces fundamental concepts and procedures by which problems are defined, described, and implemented on computing machines. The student learns principle organizations of computer architecture, how instructions are implemented, the principles of machine, assembly and higher order languages, principles of monitors and executive systems, interactions of hardware and software designs. (Lecture/Laboratory) Prerequisite: CMPT 101, 102 or 104 (may be taken concurrently).

CMPT 111-1 Introduction to an Additional Programming Language - COBOL
This is a self-study course for students who wish to learn COBOL. A self-study guide is provided and the student will have regular meetings with the instructor. (Self Study) Prerequisite: CMPT 101, 102 or 103. Students may not receive credit for more than two of CMPT 111, 112, 113, 114, 115, or 116. This course may not be taken for credit if the student has studied COBOL in a previous course.

CMPT 112-1 Introduction to an Additional Programming Language - C
This is a self-study course for students who wish to learn C. A self-study guide is provided and the student will have regular meetings with the instructor. (Self Study) Prerequisite: CMPT 101, 102 or 103. Students may not receive credit for more than two of CMPT 111, 112, 113, 114, 115, or 116. This course may not be taken for credit if the student has studied C in a previous course.

CMPT 113-1 Introduction to an Additional Programming Language - PL/1
This is a self-study course for students who wish to learn PL/1. A self-study guide is provided and the student will have regular meetings with the instructor. (Self Study) Prerequisite: CMPT 101, 102, or 103. Students may not receive credit for more than two of CMPT 111, 112, 113, 114, 115, or 116. This course may not be taken for credit if the student has studied PL/1 in a previous course.
CMPT 114-1 Introduction to an Additional Programming Language - FORTRAN
This is a self-study course for students who wish to learn FORTRAN. A self-study guide is provided and the student will have regular meetings with the instructor. (Self Study) Prerequisite: CMPT 101 or 103. Students may not receive credit for more than two of CMPT 111, 112, 113, 114, 115, or 116. This course may not be taken for credit if the student has studied FORTRAN in a previous course.

CMPT 115-1 Introduction to an Additional Programming Language - PASCAL
This is a self-study course for students who wish to learn PASCAL. A self-study guide is provided and the student will have regular meetings with the instructor. Prerequisite: CMPT 101, 102 or 103. Students may not receive credit for more than two of CMPT 111, 112, 113, 114, 115, or 116. This course may not be taken for credit if the student has studied PASCAL in a previous course.

CMPT 116-1 Introduction to a Second Programming Language: SMALLTALK
This is a self-study course for students who wish to learn SMALLTALK. A study guide is provided and the student will have regular meetings with the instructor. (Self Study) Prerequisites: CMPT 101 or 102 or 103. Students may not receive credit for more than two of CMPT 111, 112, 113, 114, 115 or 116. This course may not be taken for credit if the student has studied SMALLTALK in a previous course.

CMPT 201-4 Data and Program Organization
Reviews the basic organization of programs, data, and control languages and input/output routines. Advanced methods will be introduced for the design and implementation of large programs including the need for, type of, and implementation of modular design programs. (Lecture/Laboratory) Prerequisites: CMPT 101 (or 104), 105, MACM 101.

CMPT 205-3 Introduction to Formal Topics in Computing Science
Provides an introduction to the theoretical aspects of computing, building on computational concepts encountered in CMPT 101-4, 103-3, 104-2 and 105-3. Topics include discrete mathematical structures as they apply to computing science, and an introduction to the formal study of models of computation, formal languages and algorithms. This material is developed more extensively in subsequent upper level theory courses. (Lecture) Prerequisites: CMPT 101 (or 104), 105 and MATH 151.

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. (Lecture/Tutorial) Prerequisites: CMPT 201.

CMPT 275-4 Software Engineering
The software life cycle: requirements/specification, design, implementation, check-out, maintenance. Software tools: requirement specification languages, program design languages, program editors, program transformation systems, test data generators, automatic verifiers. Integrated programming environments. (Lecture/Laboratory) Prerequisite: CMPT 201, MACM 101 (or CMPT 205), MATH 151.

CMPT 290-3 Introduction to Digital Systems
Digital circuit design principles for small, medium and large scale integrated circuit building blocks. Switching theory, finite-state machines, introductory register-transfer level design. A sequence of lab experiments parallel and augment the lecture material. (Lecture/Laboratory) Prerequisite: CMPT 105 and MACM 101.

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. (Lecture/Laboratory) Prerequisites: CMPT 201, 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 ad 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. (Lecture/Laboratory) Prerequisite: CMPT 201.
CMPT 302-3 System Development Projects
The concepts taught in CMPT 301-3 are applied in this course by assigning the student a project to develop a computer application system. The student is expected to prepare written and oral presentations covering the critical phases of project development proposal, detailed design, status reporting, and implementation. (Lecture/Laboratory) Prerequisite: CMPT 301.

CMPT 305-3 Computer Simulation and Modelling
Introduces the techniques for modelling and computer simulation of complex systems. The philosophy and practice of modelling and of Monte Carlo simulation will be reviewed. The student will learn at least one simulation language (SIMULA, SIMSCRIPT, GPSS, CCS or other languages implemented at Simon Fraser University), apply it to a model, and simulate a non-trivial system from his/her area of interest. (Lecture/Laboratory) Prerequisites: CMPT 201, MACM 101 (or CMPT 205), STAT 270 (or MATH 272).

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. (Lecture) Prerequisites: CMPT 201, MACM 201, MATH 152 and MATH 232.

CMPT 320-3 Social Implications of a 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. (Lecture/Seminar) Prerequisites: A course in Computing Science and 45 semester hours of credit. Students with credit for CMPT 260 may not take CMPT 320 for further credit.

CMPT 340-3 Computers in Biomedicine
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. (Lecture/Laboratory) Prerequisites: completion of 60 credits including CMPT 101 (or 102, 103 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. (Lecture/Laboratory) Prerequisites: CMPT 201, MACM 201.

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, antialiasing, 2D and 3D geometrical transformations, 3D projections/viewing, Polygonal and hierarchical models, hidden-surface removal, basic rendering techniques (colour, shading, raytracing, radiosity), and interaction techniques. (Lecture/Laboratory) Prerequisite: CMPT 201 and MATH 232. Students with credit for CMPT 351 may not take CMPT 361 for further credit.

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. (Lecture/Laboratory) Prerequisite: CMPT 201.

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. (Lecture/Laboratory) Prerequisite: CMPT 275 and 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. (Lecture/Laboratory) Prerequisites: CMPT 201, CMPT 290 and MATH 152 or equivalent.

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. (Lecture/Laboratory) Prerequisites: CMPT 201, MACM 101 (or CMPT 205). Recommended: PHIL 214.

CMPT 384-3 Symbolic Computing
This course considers modelling and programming techniques appropriate for symbolic data domains such as mathematical expressions, formal languages, 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. (Lecture/Laboratory) Prerequisites: CMPT 201; MACM 101 (or CMPT 205). Recommended: PHIL 214.

CMPT 390-3 Digital Circuits and Systems
Review of introductory register-transfer level design. Construction of the basic subsystems of computers (control unit, data paths, memory, input/output). Assembly of subsystems into basic computer architectures. (Lecture/Laboratory) Prerequisites: CMPT 105 and 290.

CMPT 391-4 Computer Design Workshop
Experience with basic microcomputer implementation techniques, including bus design, logic distribution, memory design, programming read only memories, communication interfaces and identification and location of errors. In addition, this course will cover structured assembly language programming, the use of CAD software for logic design, and design with field programmable logic devices (FPLDs). A typical project includes construction of a complete microcomputer system. Students are strongly encouraged to provide their own components so that they can keep the system they design and build. (Lecture/Laboratory) Prerequisites: CMPT 390 (may be taken concurrently). Co-requisite: ENSC 105.

CMPT 400-3 High Performance Computer Architecture
This course explores techniques and architectures for construction of high performance computing systems. Arithmetic pipelines, general instruction pipelines and vector processing. SIMD architectures including interconnection networks and algorithms. Introduction to MIMD architectures. (Lecture/Laboratory) Prerequisites: CMPT 201 and 390, MACM 101 (or CMPT 205).

CMPT 401-3 Operating Systems II
This second course on operating systems studies in depth some of the issues introduced in CMPT 300, as well as new, more advanced topics in modern operating systems. Topics may include interprocess communication, threads, remote procedure calls, language constructs for concurrency, deadlocks, virtual machines, distributed systems, distributed concurrency control, group communication, issues in file system design, security and protection, performance evaluation. (Lecture/Laboratory) Prerequisites: CMPT 300 and 371.

CMPT 402-3 Operating System Software Laboratory
This course provides hands-on practical experience in mini computer and microcomputer environments. Low level computer architecture features are discussed. Lecture topics include interrupt handling, CPU scheduling, memory management, process management, device drivers, network communication, bootstrapping and overall operating systems design. Case studies of UNIX-like operating systems are discussed. Laboratory work consists of implementing various components of an operating system. (Lecture/Laboratory) Prerequisite: CMPT 300 and 390. Students with credit for CMPT 393 may not take CMPT 402 for further credit.

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. (Lecture) Prerequisite: CMPT 307.
CMPT 406-3 Computational Geometry
Mathematical preliminaries; convex hull algorithms; intersection problems; closest-point problems and their applications.
(Lecture) 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. (Lecture) Prerequisites: CMPT 307.

CMPT 409-3 Special Topics in Theoretical Computing Science
Current topics in theoretical computing science depending on faculty and student interest. (Lecture) Prerequisite: CMPT 307.

CMPT 410-3 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. (Lecture/Laboratory) Prerequisites: CMPT 201 and 384, MACM 101 (or CMPT 205).

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, nonmonotonicty and others will be examined. As well, particular approaches, such as procedural or semantic network, may be discussed. (Lecture/Laboratory) Prerequisite: CMPT 384 or 410.

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. (Lecture/Laboratory) Prerequisites: MATH 152, and nine semester hours credit 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. (Lecture/Laboratory) Prerequisites: CMPT 201 and MACM 101 (or CMPT 205), or CMPT 103 and LING 405 and 406. Students with credit for CMPT 380 cannot receive further credit for CMPT 413.

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. (Lecture/Laboratory) Prerequisites: MATH 152 and nine credits in CMPT upper division courses, or permission of the instructor.

CMPT 415-3 Special Research Projects
To be individually arranged.

CMPT 416-5 Special Research Projects
To be individually arranged.

CMPT 417-3 Intelligent Systems
Development of intelligent (aka expert) systems, the MYCIN system, abduction and uncertain reasoning, intelligent systems in the Prolog language, modern model-based systems, constraint reasoning methods, exhaustive vs. incremental search techniques, constraint logic programming methods, applications in diagnosis, scheduling, planning, process control and animation. (Lecture) Prerequisite: CMPT 384.
CMPT 419-3 Special Topics in Artificial Intelligence
Current topics in artificial intelligence depending on faculty and student interest. (Lecture/Laboratory) Prerequisite: CMPT 410.

CMPT 426-0 Practicum I
The first semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice. Prerequisite: the Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CMPT 427-0 Practicum II
The second semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice. Prerequisite: the Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CMPT 428-0 Practicum III
The third semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice. Prerequisite: the Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CMPT 429-0 Practicum IV
The fourth semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity to integrate theory and practice. Prerequisite: the Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

CMPT 430-0 Practicum V
The fifth (and optional) semester of work experience for students in the Computing Science Co-operative Education Program. It provides an opportunity for a high degree of specialization. Prerequisite: the Computing Science Co-op Co-ordinator must be contacted at the beginning of the semester prior to registration for this course.

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. (Lecture/Laboratory) Prerequisite: CMPT 354.

CMPT 459-3 Special Topics in Database Systems
Current topics in database and information systems depending on faculty and student interest. (Lecture/Laboratory) Prerequisite: CMPT 354.

CMPT 461-3 Advanced Computer Graphics
This course covers advanced topics and techniques in computer graphics. Topics include: solid modelling, curves and surfaces, fractals, particle systems, advanced rendering techniques (color spaces, shading, raytracing, radiosity, texture mapping, stereoscopy), animation, and post-production techniques. Applications in virtual reality, human figure animation, CAD, scientific visualization, and other research areas will be discussed. (Lecture/Laboratory) Prerequisites: CMPT 361 and MACM 201. Students with credit for CMPT 451 may not take CMPT 461 for further credit.

CMPT 468-3 Scientific Visualization
This course is an introduction to the field of scientific visualization. Topics include: the necessity/importance of visualization (current trends, the role of the computer scientist, identification of the purpose, data, and audience, user interface issues), existing tools and techniques for data, future trends, and social impact. Applications range from medical imaging to architecture. Projects will be of an interdisciplinary nature. (Lecture/Laboratory) Prerequisite: CMPT 461.

CMPT 469-3 Special Topics in Computer Graphics
Current topics in computer graphics depending on faculty and student interest. (Lecture/Laboratory) Prerequisites: CMPT 461.
CMPT 479-3 Special Topics in Computing Systems
Current topics in computing systems depending on faculty and student interest. (Lecture/Laboratory) Prerequisite: CMPT 401.

CMPT 480-3 Foundations of Programming Languages
Theoretical foundations of programming language semantics. Topics will typically include abstract syntax, lambda calculus, fixpoint theory, denotational semantics, axiomatic semantics, type theory, algebraic specifications. (Lecture/Laboratory) Prerequisites: CMPT 383 and MACM 201.

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. (Lecture/Laboratory) Prerequisite: CMPT 383.

CMPT 487-3 Software Engineering Tools and Environments
The design and construction of software engineering tools and environments is examined as well as the effects of their use in the software life cycle. Topics include design tools, language-based editors, tools for measurement, analysis, testing and documentation, program transformation and manipulation systems, configuration and version control tools, and software development and maintenance environments. (Seminar/Laboratory) Prerequisites: CMPT 275, 383 and 384.

CMPT 489-3 Special Topics in Programming Languages
Current topics in programming languages depending on faculty and student interest. (Lecture/Laboratory) Prerequisites: CMPT 383.

CMPT 490-3 VLSI Systems Design
The theory and application of MOS field effect transistor technology. Special emphasis is placed upon the design and layout of very large scale integrated (VLSI) digital circuits. (Lecture/Laboratory) Prerequisites: CMPT 390.

CMPT 493-1 Computing Science Presentation Seminar
This seminar will be devoted to presentation methods and content analysis. Prerequisites: CMPT 105 and at least 60 semester hours credit.

CMPT 495-3 Digital Systems Design and Specification Project
An individual project provides students with practical experience involving the design, specification and implementation of complex digital systems (typically computers). (Tutorial/Laboratory) Prerequisites: CMPT 390 and approval of the school.

CMPT 496-3 Digital Systems Implementation Project
A continuation of CMPT 495. (Laboratory) Prerequisites: CMPT 495 and approval of the school.

CMPT 499-3 Special Topics in Computer Hardware
Current topics in computer hardware depending on faculty and student interest. (Laboratory) Prerequisite: CMPT 390.

School of Engineering Science

Faculty of Applied Sciences
Location: 9851 Applied Sciences Building
Telephone: 778.782.4371, 778.782.4951 Fax
Director: A.M. Leung, BS, MS, PhD (Case W Reserve), PEng

Professors
T.W. Calvert BSc (Eng) (Lond), MSEE (Wayne), PhD (Carnegie Tech)* **
J.K. Cavers BASc, PhD (Br Col), PEng
V. Cuperman MS (TI Bucharest), SB, MS, PhD (Calif), PEng
M.J. Deen BSc (Guy), MS, PhD (Case W Reserve)
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 (Penn), DIC (Lond), MSEE, PhD (Penn)
R.H.S. Hardy BS (Eng), PhD (Alta), PEng

Associate Professors
J.S. Bird BASc (Br Col), PhD (Car), PEng
G.H. Chapman BSc, MSc (Qu), PhD (McM), PEng
W.S. Havens BSc, MSc (Virginia), PhD (Br Col)*
P.K.M. Ho BSc (BE) (Sask), PhD (Qu), PEng
J.D. Jones BSc (Sus), PhD (R'dg), PE
A.M. Leung BS, MS, PhD (Case W Reserve), PEng, Director of School
A.H. Rawicz MSc (Krakow), PhD (Gliwice)
M. Saif BSc, MSc, PhD (Cleveland), PEng
S. Stapleton BEng, MEng, PhD (Car), PEng
M. Syrzycki MSc, PhD (Warsaw)

Assistant Professors
C.R. Bolognesi BEng (McG), MEng (Carlton), PhD (Calif)***
K.K. Gupta BTech (IIT), MEng, PhD (McG)
M. Parameswaran BE (Madr), MSc, PhD (Alta)
S. Payandeh BSc, MS (Akron, Ohio), MASc, PhD (Tor), PEng
J. Vaisey BSc (Manit), MSc (Qu), PhD (Calif), PEng

Adjunct Professors
D. Connor BASc, MASc, PhD (Br Col)
P.A. Fox BSc (Pretoria), Grad Dip Eng, PhD (Cape Town)
D. Gelbart BSc, MSc (Technion, Israel)
A.B.S. Hussain BSc (Eng) (Bangladesh), PhD (Br Col)
E. Kim BSc (Seoul), MSc, PhD (Manit)
J.S. MacDonald BASc (Br Col), MS, PhD (MIT), PEng
J.A. McEwen BASc, PhD (Br Col), PEng
J.B. Peters BASc, PhD (Br Col), PEng
P. Rai-Choudhury BSc (Gauhati, India), DipGradStudies (Birm), MASc (Br Col), PhD (Pitt)
T.C. Routledge BEng (McG), PEng
K.A. Spencer BASc (Br Col), PhD (Br Col), MBA (S Fraser)
S.A. Wessel BSc, PhD (S Fraser)

Associate Members
P.N.S. Bawa: Kinesiology
R.F. Frindt: Physics
L.J. Hafer: Computing Science
R.F. Hobson: Computing Science
J.A. Hoffer: Kinesiology
T. Kameda: Computing Science
C.E. Love: Business Administration
J.B. Morrison: Kinesiology
T.L. Richardson: Kinesiology
K.L. Weldon: Mathematics and Statistics

Senior Lecturer
S.A. Stevenson BA, MA (Br Col)

Lecturer
S. Whitmore BA (Notre Dame), MA (S Fraser)

*joint appointment with Computing Science
**joint appointment with Kinesiology
***joint appointment with Physics
Advisors
Ms. C. Forget, 9825 Applied Sciences Building, 778.782.5806
Ms. H. Matsui, 9827 Applied Sciences Building, 778.782.4247
Ms. A. Radisic, 9847 Applied Sciences Building, 778.782.4295

Programs Offered

Engineering Science Program
This program leads to the degree of Bachelor of Applied Science (BASc).

Engineering Transfer Program
Available through the Faculty of Science, this program permits students with adequate standing to complete an engineering degree in one of the following ways.

- transfer into the Engineering Science program at Simon Fraser University
- transfer into the Faculty of Applied Science at the University of BC
- transfer to another university

Undergraduate courses
Course descriptions for all Engineering Science undergraduate courses.

Admission
Students intending to enter the University to study the Engineering Science program, must be eligible for admission to the University and must submit applications as described in the Admission and Readmission section. At the same time that University application is made, a student intending to study Engineering Science must also make direct application for admission to the Engineering Science program by means of a letter to the Director of the School of Engineering Science. Only students directly admitted to the school may study in the Engineering Science program.

Applicants from BC high schools will be expected to have the following subjects at the Grade 12 level: English, Algebra, Physics, Chemistry. It is strongly advised that students complete Grade 12 Computing. Admission to the program is limited and selective, based on previous academic performance.

Note: The recommended date for receipt of applications for admission by those whose goal is the BASc Engineering Science program is June 30.

In special circumstances, students may enter the program in the Spring or Summer semesters. Applications should be submitted at least two months before the start of the semester.

Transfer Credit
Normal university regulations state that 60 transfer credit hours may count toward a Simon Fraser University degree. In addition, a further 20 semester hours in Engineering Science may be credited toward the BASc degree.

BASc Program
Engineering Science students develop skills in systems design along with a high level of scientific knowledge. The program is demanding and is aimed at the superior student. The goal of the program is to produce well educated, innovative engineer/scientists who have entrepreneurial skills and attitudes and who are oriented to the new technologies. Entry to the program is on a competitive basis and, once admitted to Engineering Science, students must maintain a cumulative grade point average of 3.0 (B) to remain in the program.

The program may be completed in four years (eight semesters) of full time study. However, many take advantage of the flexibility of the program to lighten their course load or extend their work semesters. In consequence, completion of the program requirements commonly takes more than four years.
To obtain the degree, students undertake a basic core program of pure, applied and engineering sciences followed by studies in a specialized option.

The school began offering courses in September, 1983. We have four 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.

We also have a biomedical engineering stream, preparing students to pursue either graduate training or work in the interdisciplinary field of engineering as applied to the medical sciences. This stream should be combined with one of the four areas of concentration.

In all Engineering Science courses, computers 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 taken throughout the eight academic semesters ensures that all Simon Fraser University Engineering Science graduates have the communication skills necessary to be effective as engineers.

**Industrial Experience**

Every student in the Engineering Science program must complete a Co-operative Education program involving at least three work semesters and a thesis project. This results in a combination of work in an appropriate industrial or research setting with study in the chosen option. Intensive specialized study is coupled with a project under the direction of a practising engineer or scientist.

Typically, following the sixth academic semester, the student will be given the opportunity for placement in a job appropriate to his/her stated interests to work on a major project. In the seventh semester the student will take courses to help complete work on that project and prepare a formal thesis proposal. The thesis is written in the final semester of the program when the student will be taking classes part-time and working part-time on the thesis project. When appropriate, other patterns of work and study can be adopted.

The school also offers the opportunity to participate in additional work semesters throughout the program to give students further valuable experience and the chance to investigate their career choices. Engineering Science Co-operative Education will be administered through the school's Co-operative Education Co-ordinator whose responsibility it is to find and maintain appropriate work placements.

**BASc Requirements**

Students must complete a minimum of 160 semester hours of credit in basic science, general studies, engineering science, specialized engineering and science, plus project and laboratory work.

Also required is a graduation GPA of at least 3.0 calculated on the required 160 semester hours, or on the 80 semester hours of upper division credit.

Students must also complete a Co-operative Education program consisting of three semesters 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 take place within the University but in most cases the work site is off campus. A member of the external organization and a faculty member from the school jointly supervise the project.

ENSC 498 is normally taken during the seventh academic semester. During ENSC 499 the student engages in supervised study and practical work in research, development or advanced engineering. A project thesis based on this activity must be submitted.

A specialized program of study must be completed in one of four existing options: systems, electronics engineering, computer engineering and engineering physics. These are listed below on a semester-by-semester basis. Although there is no strict requirement to follow the sequence of these programs, students taking less than the designated load must be careful about scheduling and prerequisite problems in subsequent semesters. Failure to take those courses identified with an asterisk in the designated semester will almost certainly lead to such problems. Note that any semester of registration in fewer than 15 semester hours requires prior approval by the Director.
**General Studies** - This section of the program is made up of non-technical courses intended to broaden the student's education and develop an awareness of general social, economic and managerial factors which affect engineering and scientific work. All units of the engineering communication course must be completed. In complementary studies at least one course must deal with the interaction of science and technology with society and at least one course must deal with some of the central issues, methodologies and thought processes of the humanities and social sciences. The other complementary studies courses may also deal with these subjects or may be chosen from the areas of business, arts, humanities and social sciences. A list of eligible courses is available from the School. Permission may be required from the appropriate department, school or faculty to register in some of these courses. All elective choices are subject to approval by the Director. Particular course requirements follow.

ENSC 101 to ENSC 108 Engineering Communications: 6 semester hours  
ENSC 300 Engineering Design and Management: 3 semester hours  
ENSC 301 Engineering Economics: 3 semester hours  
ECON 103 Principles of Microeconomics: 3 semester hours  
One course dealing with the interaction between society and technology: 3 semester hours  
One course in humanities/social sciences: 3 semester hours  
Other complementary studies courses: 6 semester hours  
Total 27 semester hours

**Engineering Science Common Core**

**Courses and Typical Schedule**

**Semester One**
- CHEM 102-3 General Chemistry I  
- CHEM 115-2 General Chemistry Laboratory I  
- *CMPT 101-4 Introduction to High Level Programming Language A  
- *ENSC 101-0 Engineering Communications I  
- *MACM 101-3 Discrete Mathematics I  
- *MATH 151-3 Calculus I  
- *PHYS 120-3 Modern Physics and Mechanics  
(18 semester hours)

**Semester Two**
- Cmpl 1-3 first complementary studies elective  
- *CMPT 105-3 Fundamental Concepts of Computing  
- *ENSC 102-1 Engineering Communications II  
- *ENSC 125-5 Basic Electronics Engineering  
- *MATH 152-3 Calculus II  
- *PHYS 121-3 Optics Electricity and Magnetism  
- *PHYS 131-2 General Physics Laboratory B  
(20 semester hours)

**Semester Three**
- Cmpl II-3 second complementary studies elective  
- *CMPT 290-3 Introduction to Digital Systems  
- *ENSC 103-1 Engineering Communications III  
- *ENSC 222-5 Electronic Design I  
- *MATH 251-3 Calculus III  
- *MATH 310-3 Introduction to Ordinary Differential Equations  
- *Scie I-3 first science elective(1)  
(21 semester hours)

**Semester Four**
- *CMPT 201-4 Data and Program Organization(2)  
- ECON 103-3 Principles of Microeconomics  
- *ENSC 104-1 Engineering Communications IV
*ENSC 280-4 Linear Systems I
MACM 316-3 Numerical Analysis I(2)
*MATH 232-3 Elementary Linear Algebra
*STAT 270-3 Introduction to Probability and Statistics
(21 semester hours)

*course which should be taken at this point in the program (consequences of deviations from this schedule are the responsibility of the student).

1. For Electronics Engineering, Engineering Physics, and Systems, PHYS 221 is a required prerequisite and should be taken here. Computer Engineering students must select an approved basic science course.
2. Students in Engineering Physics should replace these courses with MATH 252 and PHYS 211.

**Electronics Engineering Option**
Electronics engineering is the specialization within electrical engineering which most directly relates to microelectronics and its applications in communications, control and computing. Engineers in this field are primarily concerned with the design and fabrication of systems utilizing electronic components and subsystems.

**Courses and Typical Schedule**

**Semester Five**
Cmpl III-3 third complementary studies elective
*CMPT 390-3 Digital Circuits and Systems
*CMPT 391-4 Computer Design Workshop
*ENSC 105-1 Engineering Communications V
*ENSC 321-4 Electronic Design II
*ENSC 327-4 Linear Systems II
MATH 252-3 Vector Calculus
(22 semester hours)

**Semester Six**
Cmpt I-3 first Computing Science elective
*ENSC 106-1 Engineering Communications VI
ENSC 301-3 Engineering Economics
*ENSC 327-4 Communication Systems
*ENSC 385-4 Real-Time Systems
*PHYS 324-3 Electromagnetics
Scie II-3 second science elective(1)
(21 semester hours)

**Semester Seven**
CMPT II-3 second Computing Science elective
Ensc I-4 first Engineering Science elective(2)
Ensc II-4 second Engineering Science elective(2)
*ENSC 107-1 Engineering Communications VII
*ENSC 300-3 Engineering Design and Management
ENSC 498-3 Engineering Science Thesis Proposal
Scie III-3 third science elective(1)
(21 semester hours)

**Semester Eight**
Cmpl IV-3 fourth complementary studies elective
Ensc III-4 third Engineering Science elective(2)
ENSC 108-0 Engineering Communications VIII
ENSC 499-9 Engineering Science Undergraduate Thesis  
(16 semester hours)  
Total 160 semester hours  

*course which should be taken at this point in the program (consequences of deviations from this schedule are the responsibility of the student).

1. an approved course in a basic, applied or mathematical science  
2. chosen from  
   ENSC 423-4, ENSC 428-4, ENSC 438-4, ENSC 495-4  
   ENSC 425-4, ENSC 429-4, ENSC 439-4, CMPT 495-3  
   ENSC 426-4, ENSC 435-4, ENSC 453-4, CMPT 496-3

With permission, a directed study or special project laboratory course may be chosen but, typically, no more than two will be approved for this purpose.

**Mathematics Concentration**  
The Electronics Engineering program includes a concentration in Mathematics as an optional field of study. It is recommended that students interested in Mathematics utilize their elective courses as follows.

Scie I-3 three of MATH 308-3 Linear Programming, MATH 309-3 Continuous Optimization, MATH 322-3 Complex Variables, STAT 380-3 Introduction to Stochastic Processes  
& Scie II-3  
& Scie III-3  
Cmpt I-3 MATH 243-3 Discrete Mathematics  
Cmpt II-3 open Computing Science elective  
Ensc I-4 as specified for Electronics Engineering  
Ensc II-4 as specified for Electronics Engineering  
Ensc III-4 as specified for Electronics Engineering

**Computer Engineering Option**  
The dynamic, on-going development and application of computer and digital systems has resulted in a strong demand for computer systems engineers. These individuals need to have a balanced capability in software and hardware, as well as a solid engineering base.

**Courses and Typical Schedule**

**Semester Five**  
Cmpl III-3 third complementary studies elective  
Cmpt I-3 first Computing Science elective  
*CMPT 205-3 Introduction to Formal Topics in Computing Science  
*CMPT 390-3 Digital Circuits and Systems  
*CMPT 391-4 Computer Design Workshop  
*ENSC 105-1 Engineering Communications V  
*ENSC 382-4 Linear Systems II  
(21 semester hours)

**Semester Six**  
Cmpt II-3 second Computing Science elective  
*CMPT 400-3 High Performance Computer Architecture  
*ENSC 106-1 Engineering Communications VI  
ENSC 301-3 Engineering Economics  
*ENSC 327-4 Communication Systems  
*ENSC 385-4 Real-Time Systems
Scie II-3 second science elective(1)
(21 semester hours)

Semester Seven
*CMPT 300-3 Operating Systems I
Ensc I-4 first Engineering Science elective(2)
Ensc II-4 second Engineering Science elective(2)
*ENSC 107-1 Engineering Communications VII
*ENSC 300-3 Engineering Design and Management
*ENSC 321-4 Electronic Design II
ENSC 498-3 Engineering Science Thesis Proposal
(22 semester hours)

Semester Eight
Cmpl IV-3 fourth complementary studies elective
ENSC 108-0 Engineering Communications VIII
*ENSC 429-4 Discrete Time Systems
ENSC 499-9 Engineering Science Undergraduate Thesis
(16 semester hours)

Total 160 semester hours

*course which should be taken at this point in the program (consequences of deviations from this schedule are the responsibility of the student).

1. An approved course in a basic, applied or mathematical science
2. Chosen from
   ENSC 423-4 ENSC 428-4 ENSC 438-4 ENSC 495-4
   ENSC 425-4 ENSC 429-4 ENSC 439-4 CMPT 495-3
   ENSC 426-4 ENSC 435-4 ENSC 453-4 CMPT 496-3
   With permission, a directed study or special project laboratory course may be chosen but, typically, no more than two will be approved for this purpose.

Engineering Physics (Electronics) Option
The Engineering Physics option prepares students for work in engineering and applied sciences which is strongly dependent on a sound, basic knowledge of physics in addition to a fundamental field of engineering.

Courses and Typical Schedule

Semester Five
*ENSC 105-1 Engineering Communications V
ENSC 321-4 Electronic Design II
ENSC 370-4 Transducers and Embedded Systems
*ENSC 382-4 Linear Systems II
*PHYS 233-2 Introductory Physics Laboratory A
*PHYS 244-3 Thermal Physics
*PHYS 385-3 Quantum Physics
(21 semester hours)

Semester Six
*ENSC 106-1 Engineering Communications VI
*ENSC 327-4 Communication Systems
*PHYS 324-3 Electromagnetics
*PHYS 332-3 Intermediate Laboratory
*PHYS 345-3 Statistical Physics
*PHYS 355-3 Optics
*PHYS 384-3 Methods of Theoretical Physics I
(20 semester hours)

Semester Seven
Ensc I-4 first Engineering Science elective(1)
*ENSC 107-1 Engineering Communications VII
*ENSC 300-3 Engineering Design and Management
*ENSC 301-3 Engineering Economics
*ENSC 498-3 Engineering Science Thesis Proposal
PHYS 365-3 Semiconductor Device Physics
Scie II-3 second science elective(2)
(20 semester hours)

Semester Eight
Cmpl III-3 third complementary studies elective
Ensc II-4 second Engineering Science elective(1)
Ensc III-4 third Engineering Science elective(1)
ENSC 108-0 Engineering Communications VIII
ENSC 499-9 Engineering Science Undergraduate Thesis
(20 semester hours) Total 160 semester hours

*course which should be taken at this point in the program (consequences of deviations from this schedule are the responsibility of the student).

1. Chosen from:
   ENSC 330-4 ENSC 423-4 ENSC 425-4 ENSC 426-4
   ENSC 429-4 ENSC 453-4 ENSC 495-4
   a. With permission, a directed study or special project laboratory course may be chosen but, typically, no more than two will be approved for this purpose.
2. Chosen from:
   PHYS 415-3, PHYS 455-3, PHYS 465-3

Note: students should consult the Engineering Physics Committee for advice on selecting electives.

Systems Option
The Systems option prepares students for careers involving the design and integration of computer-controlled machines and devices, and provides a foundation for graduate study in robotics and mechatronic systems. Students acquire the capability to integrate knowledge from electronic engineering, mechanical engineering, and computer engineering into the fundamental design process. This focused program includes the study of mechanical structures and mechanisms, robotics, electromechanical sensors and actuators, control engineering, and real-time systems. Students can use electives and directed study courses to tailor curriculum to specific interests and goals.

Courses and Typical Schedule

Semester Five
*ENSC 105-1 Engineering Communications V
ENSC 301-3 Engineering Economics
*ENSC 330-4 Engineering Materials
ENSC 365-4 Introduction to Electromechanical Sensors and Actuators
*ENSC 370-4 Transducers and Embedded Systems
*ENSC 382-4 Linear Systems II
(20 semester hours)
Semester Six
*ENSC 106-1 Engineering Communications VI
*ENSC 310-4 Introduction to Mechanical Design
*ENSC 385-4 Real-Time Systems
*ENSC 423-4 Modern Control Systems
PHYS 244-3 Thermal Physics
Scie II-3 second science elective(1)
(19 semester hours)

Semester Seven
Ensc I-4 first Engineering Science elective(2)
*ENSC 107-1 Engineering Communications VII
*ENSC 300-3 Engineering Design and Management
*ENSC 438-4 Introduction to Robotics
*ENSC 439-4 Computer Aided Design and Manufacturing
ENSC 498-3 Engineering Science Thesis Proposal
(19 semester hours)

Semester Eight
Cmpl III-3 third complementary studies elective
Ensc II-4 second Engineering Science elective
Ensc III-4 third Engineering Science elective
ENSC 108-0 Engineering Communications VIII
ENSC 492-2 Special Project Laboratory
ENSC 499-9 Engineering Science Undergraduate Thesis
(22 semester hours)

Total 160 semester hours

1. an approved course in a basic, applied or mathematical science
2. chosen from:
   ENSC 425-4 ENSC 426-4 ENSC 428-4 ENSC 429-4
   ENSC 435-4 ENSC 453-4 ENSC 495-4 CMPT 351-3

With permission, a directed study or special project laboratory course may be chosen but, typically, no more than two will be approved for this purpose.

**Biomedical Engineering Stream**
Biomedical Engineering is concerned with the wide range of engineering problems encountered in medical and surgical treatment, in the interactions of man and machine in a variety of environments, in medical instrumentation, and in the understanding of biomechanics.

The Biomedical Engineering stream, being interdisciplinary in nature, will consist of a basic undergraduate Engineering degree in one of the existing options, plus additional biomedical-related courses at the undergraduate level. These requirements will form the foundation to enhance the student's background before pursuing graduate training in Biomedical Engineering.

Students should fulfill course requirements for one existing options: Electronics Engineering, Engineering Physics, Systems, or Computer Engineering.

As well, the student will be required to take the following courses.
BICH 221-3 Cellular Biology and Biochemistry
BISC 101-4 General Biology
KIN 205-3 Introduction to Human Physiology
and one of
KIN 305-3 Human Physiology I
KIN 306-3 Human Physiology II (Principles of Physiological Regulation)

In addition to these compulsory courses, two additional upper division courses are required from the biomedical area, to be approved by the School. A list of eligible courses is available in the School of Engineering Science.

It is recommended that students choose from the above courses for their science electives in their undergraduate option.

Students who want to pursue a MASc degree can co-ordinate their undergraduate proposal and thesis (ENSC 498 and 499) with their MASc proposal, thereby satisfying both requirements. Contact the departmental assistant for further details.

Engineering Science Undergraduate Courses

Faculty of Applied Sciences
Note: Engineering Science courses may be taken only by those students who are currently enrolled in the Engineering Science program.

Engineering Communications
Engineering Communications develops the student's written, verbal and graphical communication skills. This work is spread throughout the duration of the engineering program and includes evaluation of laboratory reports, course essays and project reports. The student will register for one component (ENSC 101-0 to ENSC 108-0) of the course each semester. These courses are graded on a pass/fail basis.

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.

ENSC 101-0 Introduction to Engineering Communication I
This course provides a general introduction to the principles of effective communication with special emphasis on the writing process and persuasive writing. The course also explores current social and ethical issues in engineering.

ENSC 102-1 Introduction to Engineering Communication II
This course examines resumes, cover letters, interview skills, and formal reports to help students prepare for their first internship semester. The major focus is on the lab reports students write for ENSC 125, with special emphasis on developing a coherent, concise, unambiguous style appropriate to technical writing. Corequisite: ENSC 125.

ENSC 103-1 Graphical Communication for Engineering
This course provides an introduction to graphical communication as students work in teams to design, build and test a practical circuit while using technical resources available in a typical design facility. The course involves the use of several CAD packages for circuit schematic entry, mechanical design and circuit board layout. Developing good oral and technical communication skills are also stressed, with particular emphasis on oral presentations.

ENSC 104-1 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 105-1 Project Documentation
This course is integrated with one of two project courses, ENSC 370 or CMPT 391, and covers the writing of various project documents including proposals, functional specifications, design specifications, progress reports, and user's manuals. The course also examines the issues of creative thinking, group dynamics, team leadership, dispute resolution and collaborative writing. Corequisite: ENSC 370 or CMPT 391.
ENSC 106-1 Research Methods for Engineers
This course ensures that engineering students are familiar with library resources, database searches, patent searches, and industry standards. The course also covers strategies for formulating research questions and approaching the research task as well as literature surveys and bibliographic conventions. It also provides opportunities for students to explore the implications of technology and to lead group discussions of issues arising from their research.

ENSC 107-1 Engineering Law and Ethics
This course uses lectures, case studies and group discussions to increase awareness and understanding of the legal and ethical responsibilities of professional engineers. Students exercise their skills as critical thinkers and persuasive writers.

ENSC 108-0 Writing for Publication
This course examines a range of issues related to the process of publishing articles in professional journals including audience analysis, the publication process, referencing and format conventions, and anonymous reviews. It also provides a focused review of the writing process as well as how style and form can impact upon the reader's comprehension of information.

ENSC 125-5 Basic Electronics Engineering
Nature and properties of electrical circuits; linearity and superposition; Thevenin and Norton Theorems. DC circuits. AC signals and phasors. AC steady state circuit analysis: impedance, admittance and transfer properties; frequency response; detailed treatment of first order (RL and RC) circuits; properties of LCR circuits. Basic characteristics of diodes and the transistor as a switch, with applications. Introduction to transient response. Fundamentals of simple measurements, units, basic standards, accuracy, precision, uncertainty, measurement errors, sources of errors, different error types; complex measurements, electrical measurements of nonelectrical quantities, transduction theory and physical transducers; instrumentation. Two semester-hours credit in laboratory work is included in this course. (3-0-4) Corequisites: PHYS 121, 131, MATH 152.

ENSC 195-0 Job Practicum I
This is the first semester of work experience in the Co-operative Education Program available to engineering students. Credit is given as pass/withdraw (P/ W) only, based on the employer's and Co-operative Education Co-ordinator's evaluation of the student's work during the semester and of the work report submitted at the end of the work session.

ENSC 196-0 Job Practicum II
This is the second semester of work experience in the Co-operative Education Program available to engineering students. Credit is awarded as in ENSC 195. ENSC 196 may or may not involve the same employer as ENSC 195. Prerequisite: ENSC 195.

ENSC 222-5 Electronic Design I
Builds upon the material of CMPT 290-3 and ENSC 125-5 with an emphasis on the design of analog electronics. Topics: review of linear circuit analysis, electronic circuit simulation program (PSpice); non-linear characteristics and models of diodes; non-ideal performance of operational amplifiers, non-linear applications of diodes and operational amplifiers; active filters; bipolar junction transistors (BJTs), junction field-effect transistors (JFET's) and metal-oxide-semiconductor field-effect transistors (MOSFET's); qualitative device physics and terminal characteristics, transistors as switching elements; linear application biasing, temperature effects and compensation; single-stage and multistage transistor amplifiers and differential stages. Two semester-hours credit in laboratory work is included in this course. (3-0-4) Prerequisite: ENSC 125. Corequisite: CMPT 290.

ENSC 280-4 Linear Systems Dynamics I
The objectives of this course are to teach the introductory concepts in systems and control. The course will start by developing analysis procedures for the mathematical modelling of dynamic elements and will then present the concepts of the transfer function, the time response, stability, and feedback control. Additional topics will focus on techniques for the design and analysis of control systems in the frequency domain, including the root-locus method, Bode plots, the Nyquist criterion, and the design of compensators. The course concludes with an analysis of the PID controller. Lab work is included in this course. (3-0-2) Prerequisites: ENSC 125, 222 and MATH 310.

ENSC 295-0 Job Practicum III
This is the third semester of work experience in the Co-operative Education Program available to engineering students. Credit is awarded as in ENSC 195. ENSC 295 may or may not involve the same employers as preceding practicum semesters. Prerequisite: ENSC 196.
ENSC 296-0 Job Practicum IV
This is the fourth semester of work experience in the Co-operative Education Program available to engineering students. Credit is awarded as in ENSC 195. ENSC 296 may or may not involve the same employers as preceding practicum semesters. Prerequisite: ENSC 295.

ENSC 300-3 Engineering Design and Management
An introduction and overview of modern concepts of engineering design, problem solving and management. Material is presented through lectures, seminars, case studies, and historical review. Studies involve the interrelationship of such factors as problem definition, feasibility studies, specification, constraints, analysis techniques, evaluation, production project management, conflict resolution, and techniques of supervision. Student participation is expected through presentations of independent readings, case analyses and group projects. (2-2-0) Prerequisite: ENSC 301.

ENSC 301-3 Engineering Economics
The engineer as a businessman and entrepreneur. Preparation of a business plan. The economics of capital projects and production processes. Financial analysis: mortgages, loans, direct costs, depreciation, taxes, financial statements, financing alternatives. Estimation of sales, capital and operating costs of new processes and products. Cash flows. Market evaluation comparison of alternatives. Study is in part through independent reading rather than formal lectures. (3-0-0) Prerequisite: completion of at least 60 credit hours.

ENSC 310-4 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. (3-0-2) Prerequisites: PHYS 120, MATH 310.

ENSC 321-4 Electronic Design II
Different amplifier configurations will be analysed in detail. Students will be introduced to analog integrated circuit design and the analog aspects of digital electronics. Topics: high-frequency JFET and BJT models and amplifiers, feedback amplifiers, stability and frequency compensation, pole splitting, oscillators; tuned amplifiers; low-noise amplifier design; integrated-circuit technology, integrated-component characteristics and limitations, analysis of the 741 operational amplifier; logic-circuit families: Ebers-Moll model of BJT's, DTL, TTL, ECL, I2L and CMOS. Laboratory work is included in this course. (3-0-2) Prerequisite: ENSC 222.

ENSC 327-4 Communication Systems
Representation of signals; Fourier series and transforms; time and frequency convolution. Amplitude modulation: circuits and systems, single sideband, vestigial sideband. Angle modulation: phase and frequency modulation, circuits and systems. Representation of random signals: correlation, power spectra, processing in linear systems. Effect of noise on different modulation systems, thresholds in FM, system design and link budgets. Digital modulation techniques and basics of detection. Laboratory work is included in this course. (3-0-2) Prerequisites: ENSC 382 and STAT 270

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. (3-0-2) Prerequisites: CHEM 103, PHYS 121.

ENSC 365-4 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 (3-0-2) Prerequisite: ENSC 280.
ENSC 370-4 Transducers and Embedded Systems
This course introduces the student to the two areas of transduction: sensing and actuation, and to the practical aspects of interfacing transducers to computers to form embedded systems. The course illustrates the limitations of measurement and its effect on sensors and actuators through coverage of measurement techniques and transduction devices. It includes transducer/processor interfacing, and software techniques for data acquisition and control. This course is strongly laboratory based with a substantial project component. ENSC 105-1, taken concurrently with this course, will assist the student with project management and documentation. (2-0-4) Prerequisites: ENSC 222, CMPT 290. Corequisite: ENSC 105.

ENSC 382-4 Linear Systems II
Brief review of continuous and discrete time systems and the Laplace transform. Z-transform, properties, transfer function representation, transform of input/output difference equations and applications. Stability of continuous and discrete time systems, Routh stability test and Bode plots. Fourier series and Fourier transforms, properties, signal representations, systems, discretization and design of digital filters. State variable representation of continuous and discrete systems. Examples of introductory control and communication problems are presented throughout. Laboratory work is included in this course. (3-0-2) Prerequisite: ENSC 280.

ENSC 385-4 Real Time Systems
Project planning, including design and functional specifications, as well as cost and time estimation in software design. Interfacing with the external world through ports and interrupt handling from low and high level languages. Review of operating system fundamentals as they apply to real-time operating systems. Comparison of real-time, single tasking, and time share operating systems. The use of microcontrollers as building blocks to solve real-time problems. Laboratory work is included in this course. (2-0-4) Prerequisites: CMPT 201 and 290.

ENSC 395-0 Job Practicum V
This is the fifth semester of work experience in the Co-operative Education Program available to engineering students. Credit is awarded as in ENSC 195. ENSC 395 may or may not involve the same employers as preceding practicum semesters. Prerequisite: ENSC 296.

ENSC 396-0 Job Practicum VI
This is the sixth semester of work experience in the Co-operative Education Program available to engineering students. Credit is awarded as in ENSC 195. ENSC 396 may or may not involve the same employers as preceding practicum semester. Prerequisite: ENSC 395.

ENSC 400-4 Directed Studies in Engineering Science

ENSC 401-4 Directed Studies in Engineering Science

ENSC 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 semester in which the course will be taken. Typically, no more than a total of two directed study and special project laboratory courses will be approved as Engineering Science electives as set out in the program requirements. Upon completion of a directed study course, the student must submit a copy of the "deliverables" to the chair of the undergraduate curriculum committee. (3-0-2) Prerequisite: permission of the Director.

ENSC 423-4 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. (3-0-2) Prerequisites: ENSC 382, MATH 232 and 310.
ENSC 425-4 Electronic System Design
Aspects of design using digital and analog integrated circuits as circuit blocks for the realization of required system functions are treated, with project activities in the laboratory. Topics include differential amplifiers; operational amplifiers - non-ideal aspects; slew rate, gain error, sensitivities. Active filter design. D/A and A/D conversion. MSI and LSI digital circuits, combinational and sequential: decoders, encoders, multiplexers, ROM's, counters, controllers. Communication circuits: AM and FM modulators and demodulators, multiplexers, pulse modulation. Laboratory work is included in this course. (2-0-4) Prerequisite: ENSC 222.

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. (3-0-2) Prerequisite: PHYS 324.

ENSC 428-4 Data Communications
Channel models and detection techniques for digital signalling, including telephone channels, carrier and bit synch, equalization. Retransmission error control: HDLC as a model, software implementation methods and performance analysis. Forward error correction: Hamming, cyclic and convolutional codes, Viterbi algorithm. Packet network and local area network operation, interfaces, design and performance. Laboratory work is included in this course. (3-0-2) Prerequisites: ENSC 327 and 385.

ENSC 429-4 Discrete Time Systems
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. (3-0-2) Prerequisite: ENSC 382.

ENSC 435-4 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/nondestructive testing. (2-0-4) Prerequisite: ENSC 330.

ENSC 438-4 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. (3-0-2) Prerequisite: ENSC 382.

ENSC 439-4 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 modelling 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. The "Quick Chip" facility will be available for student projects, as well as a manufacturing cell consisting of several robots and computer control systems. (3-0-2) Prerequisite: ENSC 382.

ENSC 451-1 Seminar in Biomedical Engineering
A seminar course dealing with examples, principles and particular problems of engineering applications in medicine. Case studies and visiting participants are featured. (0-2-0) Prerequisite: completion of at least 60 credit hours.

ENSC 453-4 Semiconductor Device Engineering
Design of semiconductor devices, quantitative relationships among electrical, technological and material parameters, device modelling techniques, physical limitations for devices, engineering aspects of device integration and fabrication, interaction between devices in the integrated circuit. The laboratory focuses on measurement, characterization, and modelling of semiconductor devices. (3-0-2) Prerequisite: PHYS 365-3.
ENSC 460-4 Special Topics in Engineering Science

ENSC 461-4 Special Topics in Engineering Science

ENSC 462-4 Special Topics in Engineering Science
Studies in areas not included within the undergraduate course offerings of the Engineering Science program. (3-0-2) Prerequisite: permission of the Director.

ENSC 491-1 Special Project Laboratory

ENSC 492-2 Special Project Laboratory

ENSC 493-3 Special Project Laboratory

ENSC 494-4 Special Project Laboratory
These courses are 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 semester in which the course will be taken. The credit value of the project will be assessed during this review phase and the student will be directed to register in the appropriate course. Typically, no more than a total of two directed study and special project laboratory courses will be approved as Engineering Science electives as set out in the program requirements. 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 Director.

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 vapour deposition, epitaxy), etching (wet, plasma, sputtering, reactive ion), diffusion, ion implantation, multilayer 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. (2-0-4) Prerequisite: ENSC 222.

ENSC 498-3 Engineering Science Thesis Proposal
The student's time in this course is devoted to supervised study, research and development and work leading to a formal proposal for the 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 the company sponsoring the internship or by faculty members, or through some combination. A plan for the student's ENSC 498 activities must be submitted to the school at least one month prior to the start of the semester in which the course will be taken. Preparation 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: permission of the Director.

ENSC 499-9 Engineering Science Undergraduate Thesis
A thesis is based on the research, development and engineering project undertaken in the student's Co-operative Education Program. Registration for ENSC 499 takes place in the semester in which the thesis will be presented and defended, normally during semester 8. Formal approval of the topic by the School of Engineering Science is given by the granting of the grade of pass for ENSC 498. 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.

School of Kinesiology
Location: K9625 Shrum Science Centre
Telephone: 778.782.3573, 778.782.3040 Fax
Director: J.A. Hoffer BS (H Mudd College), PhD (J Hopkins)
Professors
E.W. Banister BSc (Manc), MPE (Br Col), PhD (III), FASCM
P.N.S. Bawa BSc, MSc (Punjab), MSc, PhD (Alta)
N.M.G. Bhakthan BSc (Kerala), MSc, PhD (Bda)
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 T), MSc, PhD (Rutgers)
T.W. Calvert BSc (Eng) (Lond), MSEE (Wayne), PhD (Carnegie Tech), PEng* **
J. Dickinson BA (Birm), PhD (Nott)
D. Goodman BPE, MPE (Br Col), PhD (Iowa)
J.A. Hoffer BS (H Mudd College), PhD (J Hopkins), Director of School
R.G. Marteniuk BPE, MA (Alta), EdD (Calif), Dean of Applied Sciences
I. Mekjavic BSc, MSc (Sal), PhD (S Fraser)
J.B. Morrison BSc, ARCSS (Glas), PhD (Strath)
M. Rosin BSc (Sask), PhD (Tor)
G. Tibbits BEd (McG), MS, PhD (Calif)
H. Weinberg BSc, MSc, PhD (Washington)

Associate Professors
C.L. MacKenzie BSc, MSc, PhD (Wat)
W. Parkhouse BPE (Alta), MPE, PhD (Br Col)
T.L. Richardson BSc, MSc, MD, PhD (Br Col)
M.V. Savage BA, MS (Wash), MEd (Ohio), PhD (Washington)

Assistant Professors
T.E. Milner BSc, MSc, PhD (Alta)
D. Weeks BA (Windsor), MSc (McM), PhD (Auburn)

Adjunct Professors
D. Darvill BA (Car), MA, PhD (Wat)
K. Hamilton BA (PEI), MSc, PhD (York, Can)
G.I. Morariu Dipl. Eng. (Traian Viuia), PEng

Lecturer
A.J. Leyland BEd (Exeter), MSc (S Fraser)

Laboratory Instructors
J. Anthony BSc, MSc (Madrades), PhD (New Delhi)
R.C. Asmundson BSc, MSc (S Fraser)
S. Brown BSc, MSc (S Fraser)
R. Ward BSc (Loughborough), MSc, PhD (S Fraser)

*joint appointment with Engineering Science
**joint appointment with Computing Science

Advisors
Ms. S. Dunbar, BA (S Fraser), Undergraduate Advisor, 778.782.3165
Ms. N. David-Johnston, Co-op Co-ordinator in Kinesiology, Career Advisor, K9620 Shrum Science Centre, 778.782.4541

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 School builds on the basic sciences to link the study of movement, physiology and health with the broad scope of human endeavour. Our faculty comprises anatomists, biochemists, biologists, biomechanists, biophysicists, engineers, ergonomists, kinesiologists, physicians, physiologists and psychologists. We apply our knowledge to study human movement, 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. Our educational goals are to impart a sound knowledge base and to promote critical thinking, problem solving, research, technical and communication skills appropriate to the field, through our 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

Programs
The School of Kinesiology offers programs leading to a BSc (Kinesiology), BSc Honors (Kinesiology), minor in Kinesiology, Post-Baccalaureate Diploma in Kinesiology, and Certificate in Health and Fitness Studies. The Co-operative Education Program helps Kinesiology majors gain valuable work experience during their undergraduate studies.

Areas of concentration have been established to offer cross-disciplinary undergraduate programs specializing in the following complementary areas.

- active health
- health and physiological sciences
- human factors/ergonomics
- human movement sciences

Choosing an area of concentration is not necessary to receive a BSc (Kinesiology). A general Kinesiology option is still available. The general option and the four areas of concentration include a common core covering basic anatomy, physiology, and prerequisite knowledge from the biological, chemical, physical and mathematical sciences fundamental to understanding human structure and function. The "core" refers to those aspects of the program that are required for the degree, regardless of concentration.

Undergraduate courses
Course descriptions for all Kinesiology undergraduate courses.

Major Program

Admission Requirements
Entry to the Bachelor of Science (Kinesiology) program is possible via

- direct admission from high school
- transfer from a recognized post-secondary institution
- internal transfer from within Simon Fraser University

Admission requirements from high schools and transfer from post-secondary institutions are described in the Admission and Readmission section.

Current Simon Fraser University students will be eligible for formal acceptance into the Kinesiology Major program (BSc) if they
• fill out a program approval form (available at the Academic Resource Office or Kinesiology general office) and submit it to the Kinesiology general office by September 30 (for Fall semester approval), January 31 (for Spring semester approval), or May 31 (for Summer semester approval)
• have completed Biology 12 and Mathematics 12 (or equivalents), and at least one of Chemistry 12 and Physics 12 (or equivalents)
• have completed at least 30 semester hours of credit, including at least 24 semester hours from the following:
  o BICH 221-3 Cellular Biology and Biochemistry
  o BISC 101-4 General Biology
  o CHEM 102-3 General Chemistry I
  o CHEM 115-2 General Chemistry Laboratory I
  o CHEM 150-3 Organic Chemistry I
  o CHEM 155-2 Organic Chemistry Laboratory I
  o KIN 142-3 Introduction to Kinesiology
  o KIN 201-3 Basic Biomechanics
  o KIN 203-3 Computer Applications in Kinesiology (or CMPT 103-3)
  o KIN 205-3 Introduction to Human Physiology
  o KIN 207-3 Information Processing in Human Motor Systems
  o MATH 151-3 Calculus I (or 154-3)
  o MATH 152-3 Calculus II (or 155-3)
  o PHYS 101-3 General Physics I (or 120)
  o PHYS 102-3 General Physics II (or 121)
  o PHYS 130-2 General Physics Laboratory A (or 131)
• have a 2.00 GPA or higher calculated from 24 of the semester hours listed above When the number of eligible applicants exceeds the number that can be accommodated, Simon Fraser University reserves the right to select from among the qualified candidates.

Program Requirements
All courses listed as required for the major must be completed at a grade of C- or higher.

The basic semester hour requirements underlying the major program are as follows.

Kinesiology (lower division specified); 15 semester hours
Faculty of Science (lower division specified); 31 semester hours
Kinesiology (upper division specified); 12 semester hours
Statistics (upper division specified); 3 semester hours
Kinesiology (upper division unspecified); 27 semester hours
Electives (lower division partly specified ); ; semester hours
Electives (upper division unspecified); 3 semester hours
Free Electives (upper or lower division unspecified); 23 semester hours
120 semester hours in total

Areas of Concentration
The School of Kinesiology has defined four areas of concentration for those wishing to take a more specialized approach to their studies in the field of Kinesiology. They are as follows.

• active health
• health and physiological sciences
• human factors/ergonomics
• human movement sciences

Each area of concentration has a set of recommended courses outside the core. Core refers to those aspects of the program that are required, regardless of concentration area. Choosing an area of concentration is not necessary to receive a Bachelor of Science (Kinesiology) degree. A general option is still available and is outlined below. For more information on areas of concentration and their recommended courses, contact the Kinesiology general office.
Lower Division Requirements

Lower Division Core
The following courses are specified for all areas of concentration.

*Biochemistry* - BICH 221-3 Cellular Biology and Biochemistry (3 semester hours)

*Biology Sciences* - BISC 101-4 General Biology I (4 semester hours)

*Chemistry* - CHEM 102-3 General Chemistry I, 115-2 General Chemistry Laboratory I, 150-3 Organic Chemistry I, 155-2 Organic Chemistry Laboratory I (10 semester hours)

*Kinesiology* - KIN 142-3 Introduction to Kinesiology, 201-3 Basic Biomechanics, 205-3 Introduction to Human Physiology, 207-3 Information Processing in Human Motor Systems
plus one of: CMPT 103-3 Introduction to PASCAL Programming, KIN 203-3 Microcomputer Applications in Kinesiology; (15 semester hours)

*Mathematics* - one of MATH 151-3 Calculus I, 154-3 Calculus I for the Biological Sciences; plus one of MATH 152-3 Calculus II, 155-3 Calculus II for the Biological Sciences; (6 semester hours)

*Physics* - one of PHYS 101-3 General Physics I, 120-3 Modern Physics and Mechanics; plus one of PHYS 102-3 General Physics II, 121-3 Optics, Electricity and Magnetism; plus one of PHYS 130-2 General Physics Laboratory A, 131-2 General Physics Laboratory B; (8 semester hours)

Total 46 semester hours

Lower Division Electives
Each area of concentration has its own set of recommended courses within the following framework.

A minimum of six semester hours must be selected from one or more of the following departments: Business Administration, Communication, English, Philosophy, Psychology, Political Science, or Sociology and Anthropology.

(6 semester hours)

Total 52 semester hours

Upper Division Requirements

Upper Division Core
The following courses are specified for all areas of concentration.

*Kinesiology* - KIN 305-3 Human Physiology I, 306-3 Human Physiology II, 326-3 Functional Anatomy, 407-3 Human Physiology Laboratory; (12 semester hours)

*Statistics* - STAT 301-3 Statistics for the Life Sciences; (3 semester hours)

Total 15 semester hours

Upper Division Electives
Each area of concentration has its own set of recommended courses within the following framework.

Students must take a minimum of 27 semester hours of Kinesiology upper division credit, chosen from the following.

301-3 Biomechanics Laboratory
303-3 Kinanthropometry
320-3 Cultural Aspects of Human Movement
336-3 Microscopic Anatomy (Histology)
343-3 Fitness Appraisal and Guidance
367-3 Psychology of Motor Skill Acquisition
375-3 Physiological Basis of Growth and Development Auxology
380-3 Occupational Biomechanics
382-3 Physical Hazards in the Workplace
383-3 Human-Machine and Human-Computer Interaction
402-3 Mechanical Properties of Tissues
410-3 Exercise Physiology
412-3 Molecular and Cellular Cardiology
415-3 Neural Control of Movement
418-4 Electrophysiological Techniques Lab
* 420-3 Selected Topics in Kinesiology I
* 421-3 Selected Topics in Kinesiology II
* 422-3 Selected Topics in Kinesiology III
423-3 Selected Topics in Kinesiology IV
424-4 Selected Topics in Kinesiology V
426-3 Neuromuscular Anatomy
430-3 Human Energy Metabolism
431-3 Environmental Carcinogenesis
442-3 Biomedical Systems
460-3 Cellular Mechanisms and Theories of Aging
461-3 Physiological Aspects of Aging
467-3 Human Motor Performance
481-3 Activity-Generated Musculoskeletal Disorders
485-4 Man Beneath the Sea
486-3 Industrial Design
496-3 Directed Study I
498-3 Directed Study II

*No more than nine semester hours may be taken from a combination of these courses. Students may substitute BICH 321 to help satisfy this requirement.

Students must also take three semester hours of upper division courses offered in any discipline within the University.

Total 45 semester hours

**Free Electives**
A further 23 semester hours of free electives may be taken from any discipline within the University at either the lower or upper division level.

**Requirements for Students Transferring to Professional Schools**
Students are eligible to receive a BSc (Kinesiology) degree after completion of the second year of professional study. Students must have completed at least 90 semester hours of Simon Fraser University credit comprising the following.

- all lower division requirements
- 27 upper division semester hours in Kinesiology (including KIN 305, 306, 326, and 407) and STAT 301
- acceptance into an accredited professional program in dentistry, medicine, chiropractic, or veterinary medicine

Courses taken in the professional program must not duplicate courses already taken at Simon Fraser University and must be acceptable for transfer credit to the University. Candidates must apply for transfer credit and for receipt of the degree through the Office of the Registrar.

**Suggested Course Pathways**
Suggested course selections for majors and those interested in any of the four areas of concentration are available from the Kinesiology general office.
Honors Program
The Honors program is designed for approved Kinesiology major students who wish to pursue an advanced degree in Kinesiology.

Application Requirements
Honors program application requires the following.

- completion of a minimum of 60 semester hours
- 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 honors, the student must successfully complete the following.

- a minimum of 132 semester hours, with a minimum of 60 upper division credits of which at least 54 must be in Kinesiology
- completion of all Kinesiology major program requirements
- KIN 497-3 and KIN 499-12
- a minimum CGPA of 3.00

Minor Program

Application Requirements
Application for a minor in Kinesiology requires the following.

- completion of KIN 105 (or 205) and KIN 142 a with a minimum grade of C
- submission of a program approval form to the undergraduate advisor.

Program Requirements
Students must complete the following for a minor in Kinesiology.

- KIN 142 and 105 (or 205)
- 15 semester hours of upper division Kinesiology courses
- 3 semester hours of other Kinesiology work (upper or lower division)
- a minimum GPA of 2.00 calculated from those upper division Kinesiology courses used to satisfy the requirements

Co-operative Education Program
Co-operative Education combines work experience with academic studies. The student spends alternate semesters on campus and in paid, study-related jobs. Co-op programs are available in kinesiology and biomedical sciences.

Arrangements for the work experiences are made through the school's Co-op Co-ordinator and the University's Office of Co-operative Education. For further details on the co-op system, students should refer to the Co-operative Education section.

Post Baccalaureate Diploma in Kinesiology
The Post Baccalaureate Diploma program in Kinesiology is available for students who have already completed a degree.

For information, refer to Continuing Studies.

Requirements
Successful completion of an approved program comprised of 30 credit hours of upper division or graduate level courses. Courses must be selected from an approved listing in consultation with a program advisor.
Certificate in Health and Fitness Studies
This program provides adults with the opportunity to complete a coordinated program of university 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 certificate program is useful to those supervising training and/or fitness programs, to sport coaches, and to the general public.

The program can be completed entirely by correspondence, if desired.

Admission is governed by the University admissions regulations. For details, see the Admission and Readmission section of this calendar.

Please note that a maximum of nine credit hours are transferrable to the certificate from any other institution, including the Open Learning Agency.

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
Students must complete all of the following specified courses:
KIN 105-3 Fundamentals of Human Structure and Function
KIN 110-3 Current Topics in Nutrition
KIN 140-3 Contemporary Health Issues
KIN 142-3 Introduction to Kinesiology
KIN 143-3 Exercise Management

Students must also complete nine credit hours (three courses) of electives, including at least three credit hours (one course) in Kinesiology, chosen from the following.

- any other Kinesiology not listed above (prerequisites may apply)
- PSYC 250-3 Child Psychology
- 280-3 Biological Bases of Behaviour
- SA 216-4 Sociology of Leisure
- a minimum 2.00 GPA calculated on courses counting toward the certificate
- a current cardio-pulmonary resuscitation (CPR) certificate at time of completion
- program completion normally within five years of admission to the certificate program
- elective courses (prerequisites may apply) commonly taken for credit toward the certificate include:
  - KIN 141-3 Introduction to Sport Science
  - KIN 220-3 Human Foods and Nutrition
  - *KIN 241-3 Sports Injuries - Prevention and Rehabilitation
  - *KIN 303-3 Kinanthropometry
  - KIN 320-3 Cultural Aspects of Human Movement
  - KIN 325-3 Basic Human Anatomy
  - KIN 367-3 Psychology of Motor Skill Acquisition
  - *KIN 370-3 Biomechanics in Physical Activity
  - KIN 375-3 Physiological Basis of Growth and Development

*not offered by correspondence

Kinesiology Undergraduate Courses

Faculty of Applied Sciences
Students wishing to register for Kinesiology courses must have obtained a grade of C- or better in prerequisite courses.
KIN 105-3 Fundamentals of Human Structure and Function
This course will provide students with basic physiology of the nervous system, and muscle, endocrine system, cardio-respiratory system, kidney and gastrointestinal system. (Distance Education) Prerequisites: Grade 11 Biology, Chemistry and Physics are recommended. Kinesiology majors and honors students may not receive credit for KIN 105. Students with credit for KIN 100 may not receive credit for KIN 105.

KIN 110-3 Current Topics in Human Nutrition
A study of the basic nutritional needs and general nutritional status of affluent and indigent populations. Causes and consequences of undernutrition and malnutrition, food additives and contaminants, nutrition in health, disease and in athletic preparation, etc., will be studied. (Lecture/Tutorial)

KIN 140-3 Contemporary Health Issues
Focuses on current problems in developing and sustaining the health and fitness of the nation. Topics discussed will range from indices of current national health status, present health care delivery systems, allied para-medical agencies, new methods in marketing health, review of the concepts of preventative and rehabilitative health care across the broad spectrum of society and special topics such as drug abuse, human sexuality, medical technology and ergonomics. (Lecture/Tutorial)

KIN 141-3 Introduction to Sport Science
A broad overview of factors contributing to athletic performance. The role of the scientist in developing technologies, training environments and methods contributing to elite performance will be studied. (Lecture/Tutorial) Prerequisite: BC Grade 12 sciences recommended.

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. (Lecture/Laboratory) Recommended: Grade 11 Biology, Chemistry and Physics are recommended.

KIN 143-3 Exercise Management
Introduces the student to the areas of exercise management and exercise physiology. The importance of individual variation and personal exercise prescription is emphasized. Medical clearance from a personal physician is recommended. (Lecture/Laboratory)

KIN 201-3 Basic 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. (Lecture/Tutorial) Prerequisites: MATH 152 or 155, PHYS 101 or 120, KIN 142. Students with credit for KIN 401 may not take KIN 201 for further credit.

KIN 203-3 Computer Applications in Kinesiology
An introductory course on the various applications of computers to the study of Kinesiology. Topics to be covered include operating systems and programming languages, computer simulations, computer aided instruction, data capture and analysis and real-time control. (Lecture/Laboratory) Prerequisites: KIN 142 and approval as a Kinesiology major.

KIN 205-3 Introduction to Human Physiology
This course will introduce the physiological concepts of membrane biophysics, the nervous system and muscles, cardio-respiratory system, kidney and gastrointestinal system. (Lecture/Tutorial) Prerequisites: BICH 221 (or BISC 201), CHEM 102, and PHYS 101 (or 120). Students with credit for KIN 100 may not receive credit for KIN 205.

KIN 207-3 Information Processing in Human Motor Systems
Students are introduced to human motor systems from psychological, physiological and computational approaches. We consider voluntary goal-directed movements, primarily from a behavioral perspective, and the motor systems underlying locomotion, communication (speech, gesture, drawing, writing), emotional expression, grasping and manipulation. (Lecture/Tutorial) Prerequisites: KIN 142 or permission of instructor.
KIN 220-3 Human Foods and Nutrition
A study of foods and nutrients they contain, from the perspective of their function in the tissues, systems and organs of the intact human organism. The emphasis will be on providing a physiological understanding of the body's need for nutrients and the manner in which they are utilized. Prerequisites: KIN 105 or 205 (formerly KIN 100), and 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 in the Course Timetable and Registration Instructions.

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. (Lecture/Laboratory) Prerequisite: KIN 142.

KIN 280-3 Introduction to Human Factors/Ergonomics
This course deals with the field of human factors. Human factors refers to designing for human use. The approach of the course is to present a systematic application of relevant information about human capabilities, limitations, characteristics, behavior and motivation to the design of things, procedures people use, and the environment in which they use them. Prerequisites: KIN 142, 201, 207 or permission of the instructor.

KIN 301-3 Biomechanics Laboratory
This laboratory course covers the quantitative biomechanical evaluation of human movement. Analysis techniques for quantifying motion of body segments in athletes, normal populations and special populations will be included. Experiments will measure force production in whole body activities such as walking and jumping. Experiments will also look at the nature of muscular force generation and the mechanical properties of the musculoskeletal system. Prerequisites: PHYS 130 or 131, KIN 201. Students with credit for KIN 401 may not take KIN 301 for further credit.

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. (Lecture/Tutorial/Laboratory) Prerequisite: KIN 142 and 45 credit hours.

KIN 305-3 Human Physiology I
Deals with the physiology and pathophysiology of the cardiovascular, respiratory, renal and gastrointestinal systems, and involves a detailed and vigorous analysis of both rest and exercise function under normal and extreme environmental conditions. Assumes a firm grounding in basic physiology and will cover a broad range of material. (Lecture/Tutorial) Prerequisites: KIN 205 (formerly KIN 100), CHEM 150, 155, PHYS 102 (or 121), MATH 155 (or 152).

KIN 306-3 Human Physiology II (Principles of Physiological Regulation)
The control systems of the human body, principles of physiological regulation. The structure and function of the central nervous system and the endocrine system. Special senses, and sensation, neurological and endocrine control mechanisms and neuroendocrine interactions. (Lecture/Tutorial) Prerequisites: KIN 205 (formerly KIN 100), CHEM 150, 155, PHYS 102 (or 121), MATH 155 (or 152).

KIN 320-3 Cultural Aspects of Human Movement
The cultural aspects of human motor behavior; the effects of social institutions on the expressed values of selected cultures toward human motor behavior; and an examination of the pertinent aspects of our present culture which may reflect implications for the future of games, sports, dances, and other forms of physical expression. (Lecture) Prerequisite: at least 60 semester hours credit.

KIN 325-3 Basic Human Anatomy
An introductory course 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. (Distance Education) Prerequisites: KIN 105 (formerly KIN 100) and 142. 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 326-3 Functional Anatomy
Pursues a systematic study of human anatomy with emphasis on functional applications. It is designed to provide the student with detailed three dimensional knowledge of organs and body systems plus the ability to apply this knowledge to daily activities. (Lecture/Laboratory) Prerequisites: KIN 142, 205-3 (formerly KIN 100) and at least 60 hours undergraduate course credit. Students with credit for KIN 325 may not take KIN 326 for further credit.

KIN 336-3 Microscopic Anatomy (Histology)
Light and electron microscopic study of mammalian tissues and organs with emphasis on human systems. (Lecture/Laboratory) Prerequisite: KIN 326 or permission of the instructor.

KIN 343-3 Active Health: Assessment and Promotion
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. (Lecture/Laboratory) Prerequisites: KIN 105 or 205 (formerly KIN 100), 142, 143 and 303 (KIN 303 may be taken concurrently).

KIN 351-0 Practicum I
The first semester of work experience. It is available only to Kinesiology Co-operative Education students. Prerequisites: students must apply to the Kinesiology Co-op Co-ordinator at least one semester in advance. They will normally be required to have completed 45 semester hours of credit with a GPA of 2.5. A student may not register for KIN 499 and 351 concurrently.

KIN 352-0 Practicum II
The second semester of work experience. It is available only to Kinesiology Co-operative Education students. Prerequisites: students must apply to the Kinesiology Co-op Co-ordinator at least one semester in advance. They will normally be required to have completed KIN 351 plus 60 credits. A student may not register for KIN 499 and 352 concurrently.

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. (Lecture/Tutorial/Laboratory) Prerequisite: at least 60 hours of undergraduate course credit.

KIN 370-3 Biomechanics in Physical Activity
To provide knowledge of a biomechanical nature which has direct application to the teaching and learning of physical skills. KIN 370 is aimed at Kinesiology Minors, Health and Fitness Certificate students and Faculty of Education students in the Minor in Elementary School Physical Education Program. (Lecture/Tutorial) Prerequisites: KIN 105 (formerly KIN 100), 142, and 143. Kinesiology Majors cannot obtain credit for both KIN 201 and 370.

KIN 375-3 Physiological Basis of Growth and Development Auxology
The fundamentals of physiologic growth and development of the developing child, and the design of appropriate activity programs throughout the range from kindergarten to Grade 12. (Lecture/Tutorial) Prerequisite: KIN 105 or 205 (formerly KIN 100), 142 and 143.

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. Prerequisites: KIN 201, 205 and 326 which may be taken concurrently.

KIN 382-3 Physical Hazards in the Workplace
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. Prerequisites: KIN 142, PHYS 130 or 131, KIN 201, 205, 280. Students with credit for KIN 480 may not take KIN 382 for further credit.
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. (Lecture/Tutorial) Prerequisites: at least 60 credit hours and KIN 280 or by permission of instructor, KIN 203 or relevant computing background required.

KIN 402-3 Mechanical Properties of Tissues
A study of the mechanical behavior of tissues of the body and relation of this behavior to their structure and function. The course is designed to fill the gap between basic anatomical (micro and macro) structure and physiological function, with a view to assessing the effects of unusual conditions (including exercise) upon behavior to tissues. (Lecture/Tutorial) Prerequisite: KIN 301.

KIN 407-3 Human Physiology Laboratory
Experiments dealing with the nervous, muscular, cardiovascular, respiratory, and renal systems are covered. (Laboratory) Prerequisite: PHYS 130 (or 131). KIN 305 and 306, one of which must already have been completed and the other can be taken concurrently.

KIN 410-3 Exercise Physiology
Advanced study of exercise as a perturbing to homeostasis. Focus is on the cellular mechanisms by which skeletal and cardiac muscle respond to both acute and chronic stress. (Lecture/Seminar) Prerequisites: KIN 305, KIN 306.

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. (Lecture/Tutorial) 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. (Lecture/Tutorial) Prerequisites: KIN 306 or BISC 305 or PSYC 381.

KIN 418-4 Electrophysiological Techniques Lab
This laboratory course allows students to explore basic biophysical and electrophysiological properties of excitable tissues in a realistic research environment and to develop practical laboratory skills for the neurosciences. Prerequisite: KIN 306. Recommended: KIN 415.

KIN 420-3 Selected Topics in Kinesiology I
Seminar 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 semester to semester, depending on faculty availability and student interest. Prerequisites: to be announced in the Course Timetable and Registration Instructions.

KIN 421-3 Selected Topics in Kinesiology II
Seminar 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 semester to semester, depending on faculty availability and student interest. Prerequisites: to be announced in the Course Timetable and Registration Instructions.

KIN 422-3 Selected Topics in Kinesiology III
Seminar 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 semester to semester, depending on faculty availability and student interest. Prerequisites: to be announced in the Course Timetable and Registration Instructions.
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 semester to semester, depending on faculty availability and student interest. (Lecture/Tutorial) Prerequisite: to be announced in the Course Timetable and Registration Instructions.

KIN 424-3 Selected Topics in Kinesiology V
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 semester to semester, depending on faculty availability and student interest. (Lecture/Tutorial) Prerequisite: to be announced in the Course Timetable and Registration Instructions.

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 326.

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. (Lecture/Tutorial) Prerequisite: BICH 221 (or 201). Students with credit in KIN 330 may not take KIN 430 for further credit.

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. (Lecture/Tutorial) Prerequisite: at least 90 semester hours of credit.

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. (Lecture/Tutorial) Prerequisites: MATH 155 (or 152), PHYS 130 (or 131), KIN 305, 306.

KIN 451-0 Practicum III
The third semester of work experience. It is available only to Kinesiology Co-operative Education students. Prerequisites: students must apply to the Kinesiology Co-op Co-ordinator at least one semester in advance. A student may not register for KIN 499 and 451 concurrently.

KIN 452-0 Practicum IV
The fourth semester of work experience. It is available only to Kinesiology Co-operative Education students. Prerequisites: students must apply to the Kinesiology Co-op Co-ordinator at least one semester in advance. They will normally be required to have completed KIN 451 plus 90 credits. A student may not register for KIN 499 and 452 concurrently.

KIN 453-0 Practicum V
The fifth semester of work experience. It is available only to Kinesiology Co-operative Education students. Prerequisites: students must apply to the Kinesiology Co-op Co-ordinator at least one semester in advance, and normally must have completed KIN 452. A student may not register for KIN 499 and 453 concurrently.

KIN 460-3 Cellular Mechanisms and Theories of Aging
This course will review the models used in gerontological research at cellular and molecular level and discuss the validity of various theories of aging. (Lecture/Tutorial) Prerequisites: BICH 221 (or BISC 201), KIN 105 or 205 (formerly KIN 100), 142 and 90 credit hours.
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. (Lecture/Tutorial) Prerequisites: KIN 105 or 205 (formerly KIN 100), 142 and 90 credit hours.

KIN 467-3 Human Motor Performance
An analysis of models of performance. The approach will rely heavily on an information processing analysis of performances. Course content will include: perceptual mechanisms in skill, attention and performance, signal-detection theory, anticipation and timing, decision mechanisms and reaction time, control processes for movement, theories of learning and performance. (Lecture/Tutorial/Laboratory) Prerequisite: at least 45 hours of undergraduate course credit.

KIN 470-3 Motor Activities Laboratory I
Application of principles of motor learning, biomechanics and physiology to the learning of physical skills inherent in some individual sporting and recreational activities. (Laboratory) Prerequisites: this course is intended for students completing the course sequence in physical education; KIN 367, 370 and 375.

KIN 471-3 Motor Activities Laboratory II
Application of principles of motor learning, biomechanics and physiology to the learning of physical skills inherent in some team sports. (Laboratory) Prerequisites: this course is intended for students completing the course sequence in physical education; KIN 367, 370 and 375.

KIN 481-3 Activity-Generated Musculoskeletal Disorders
This is a kinesiological approach to understanding the causes and prevention of musculoskeletal disorders caused by activity (work and sport). Particular attention will be paid to injuries to the back, neck, hand and arm. (Lecture/Tutorial/Laboratory) Prerequisites: KIN 207 and 380.

KIN 485-4 Man Beneath the Sea
The theme is human factors in the underwater environment. The physiological effects of pressure on the human body and interfacing of man 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. (Lecture/Tutorial/Laboratory) Prerequisites: KIN 305, 306, MATH 155 (or 152).

KIN 486-3 Human Factors in Industrial Design
The objective of the course is to learn the rudiments of design layout. In an industrial context, a well-designed human-machine system must have more than just good display and control components. The essence of industrial design is to arrange system components so as to minimize production inefficiencies and quality control and safety compromises. Industrial examples will be presented to illustrate how human-factors input can improve the production process and help to control some of the extreme hazards that arise in industrial environments. Prerequisites: KIN 203 or relevant computing experience, KIN 303, 326 and 380.

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 student who has completed KIN 499 may not receive credit for KIN 496. A short proposal of the project, approved by the course supervisor must be submitted for approval to the Director before the first registration period for the semester in which the student plans to register. Prerequisites: permission from the chair of the Undergraduate Program Committee. Usually, upper level standing with at least 75 semester hours in the Kinesiology program will be required.

KIN 497-3 Kinesiology Undergraduate Honors Thesis Proposal
Supervised directed study and research leading to the development of a formal undergraduate thesis proposal for work 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 Curriculum Committee. The plan of activities for each KIN 497 should be submitted to the Chair of the Undergraduate Curriculum Committee for approval one month prior to the semester in which the course will be taken. Prerequisites: only students in the
honors program may register for KIN 497; 90 credit hours, STAT 301, and permission of the Chair of the Undergraduate Curriculum 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 Director of Kinesiology before the first registration period of the semester in which the student plans to register. Prerequisites: STAT 301 and permission from the Chair of the Undergraduate Program Committee. Usually, upper level standing with at least 75 semester hours in the Kinesiology program will be required. Students with credit for KIN 497 may not take KIN 498 for further credit. Honors student may not take KIN 498 for credit.

KIN 499-12 Kinesiology 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 Curriculum Committee by the last day of exams of the semester. The thesis will also be presented orally as a seminar in an open forum at the end of the semester. Prerequisites: KIN 497. Only students in the honors program may register for KIN 499. A student may register for one other course concurrently with KIN 499 with permission from the faculty supervisor for KIN 499.

Department of Archaeology
Location: 9635 Multi Purpose Complex
Telephone: 778.782.3135
Chair: J.C. Driver MA (Camb), PhD (Calg)

Professors Emeriti
R.L. Carlson BA, MA (Wash), PhD (Ariz)
R. Shutler, Jr. BA, MA (Calif), PhD (Ariz)

Professors
D.V. Burley BA, MA (New Br), PhD (S Fraser)
K.R. Fladmark BA (Br Col), PhD (Calg)
B.M.F. Galdikas BA (Br Col), MA, PhD (Calif)
B.D. Hayden BA (Colorado), MA, PhD (Tor)
J.D. Nance BA, MA (Calif), PhD (Calg)
D.E. Nelson BSc (Sask), PhD (McM)

Associate Professors
J.C. Driver MA (Camb), PhD (Calg), Chair of Department
P.M. Hobler BA (New Mexico), MA (Arizona)
M.F. Skinner BA (Alta), PhD (Camb)

Assistant Professor
A.C. D'Andrea BSc (Tor), MSc (Lond), PhD (Tor)

Adjunct Professor
A.D. McMillan BA (Sask), MA (Br Col)

Associated Faculty
J.M. D'Auria Chemistry
D.J. Huntley Physics
R.W. Mathewes Biological Sciences

Advisor
Ms. A. Sullivan, 9633A Multi Purpose Complex, 778.782.4687
The department offers courses leading to a Bachelor of Arts degree. Students planning to major or take honors in Archaeology are expected to obtain a multi-disciplinary background by taking courses in a number of complementary disciplines and are urged to seek advice from the department early in their university careers with regard to the structuring of their individual programs. PHYS 181-3 is specifically recommended for majors.

**Undergraduate courses**
Course descriptions for all Archaeology undergraduate courses.

**Upper Division Courses**
Upper division Archaeology courses are divided into the following groups.

Group I
- ARCH 372-5 Archaeology Laboratory Techniques (or 433)
- ARCH 376-5 Quantitative Methods in Archaeology
- ARCH 471-5 Archaeological Theory

Group II
- ARCH 340-5 Introductory Zooarchaeology
- ARCH 365-3 Ecological Archaeology
- ARCH 373-5 Human Osteology
- ARCH 377-5 Historical Archaeology
- ARCH 385-5 Paleoanthropology
- ARCH 390-5 Introduction to Archaeobotany
- ARCH 410-5 Advanced Archaeometry
- ARCH 411-5 Archaeological Dating
- ARCH 432-5 Advanced Physical Anthropology
- ARCH 438-5 Geoarchaeology
- ARCH 442-5 Forensic Anthropology
- ARCH 485-5 Lithic Technology

Group III
- ARCH 301-3 Prehistoric and Primitive Art
- ARCH 330-3 Prehistory of Latin America
- ARCH 336-3 Special Topics in Prehistoric and Primitive Art
- ARCH 344-3 Primate Behavior
- ARCH 360-5 Native Cultures of North America
- ARCH 370-3 Western Pacific Prehistory
- ARCH 374-3 Prehistory of South and East Asia
- ARCH 386-3 Archaeological Resource Management
- ARCH 474-3 Regional Studies in Archaeology: North America - Southwest
- ARCH 476-5 Regional Studies in Archaeology: North America - Northwest Pacific

Special topics and/or directed reading courses may be substituted for group II or III courses, provided that the content of the special topics and/or directed studies course suggests a suitable substitution, and that written consent of the department is obtained prior to registration.

**Major Program**
Students who will major in Archaeology must fulfill the following requirements.

**Lower Division Requirements as Prerequisites**
- ARCH 101-3 Introduction to Archaeology
- ARCH 131-3 Human Origins
- ARCH 272-3 Archaeology of the Old World
- ARCH 273-3 Archaeology of the New World
It is recommended that students take these courses in consecutive order.

**Upper Division Requirements**
Students must complete at least 30 semester hours of upper division Archaeology which must include the following.

- all group I courses
- at least two courses from group II
- at least two courses from group III

**Honors Program**
Archaeology majors who wish admission to the honors program must have a minimum CGPA of 3.0 and obtain permission of the department. To remain in the program, students must maintain that average and also successfully complete 132 hours which must include ARCH 493 and 499. Also, please refer to the Faculty of Arts, Bachelor of Arts Honors Program section.

**Minor Program**
Students who will minor in Archaeology must fulfill the following requirements.

**Lower Division Requirements as Prerequisites**
ARCH 101-3 Introduction to Archaeology
ARCH 131-3 Human Origins

**Upper Division Requirements**
Students must complete at least 15 hours of upper division Archaeology including at least one course from each of groups I, II, and III, listed above.

**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. Students must have their program approved by the advisor for the extended minor program.

**Languages Other Than English**
Students who contemplate graduate work are advised to acquire a reading knowledge of at least one language other than English.

**Joint Major in Archaeology and Latin American Studies**
See the Spanish and Latin American Studies section.

**Co-operative Education Program**
This program is for students who wish to acquire work experience in archaeology and physical anthropology. The program entails planned semesters of study and employment (termed practicums) in an area of the student's choice.

**Requirements**
To be admitted, students must have declared a major and have completed at least 30 semester hours, with a minimum cumulative grade point average of 3.0, including the following courses (or equivalent as approved by the department Co-operative Education Co-ordinator).

- **both**
  - ARCH 101-3 Introduction to Archaeology
  - ARCH 131-3 Human Origins

- **one of**
  - ARCH 272-3 Archaeology of the Old World
  - ARCH 273-3 Archaeology of the New World

- **three of**
  - ARCH 372-5 Archaeology Laboratory Techniques
ARCH 373-5 Human Osteology
ARCH 376-5 Quantitative Methods in Archaeology
ARCH 377-5 Historic Archaeology
ARCH 386-3 Archaeological Resource Management
ARCH 442-5 Forensic Anthropology

To participate in Co-op Education, contact the Co-op Education Co-ordinator, Undergraduate Chair, and/or Departmental Assistant at least one semester before the first work semester (see the Co-operative Education section which describes job competition, responsibilities of the student and employer, student fees, pay rates and evaluation). During work semesters, Co-op students are formally registered in a job practicum course and assessed a fee.

Continuation in this program requires that the student maintain a minimum CGPA of 3.0 in all course work. College transfer students must have completed at least 15 semester hours at Simon Fraser University before becoming eligible for admission to the Co-operative Education program. Transfer students who have participated in co-operative education programs elsewhere may be credited with the semester(s) already taken pending evaluation and approval of the Simon Fraser University Co-operative Education Program.

Archaeology Undergraduate Courses

Faculty of Arts

ARCH 101-3 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. (Lecture/Tutorial)

ARCH 105-3 The Evolution of Technology
A history of technology from earliest times to the beginning of the Industrial Revolution. The course will discuss the causes and effects of technological change, as illustrated by specific technological developments including stone tools, metallurgy, agriculture, etc. (Lecture/Tutorial)

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. (Lecture/Tutorial)

ARCH 200-3 Ancient Peoples and Places - Special Topics in World Prehistory
Non-specialized introductory summaries of selected regional topics in world prehistory. (Lecture) Students who receive credit once for this course may not take it again for further credit.

ARCH 223-3 The Prehistory of Canada
Canadian cultures of the prehistoric period. The development of native cultures of Canada from 20,000 years ago to the historic period. (Lecture/Tutorial)

ARCH 272-3 Archaeology of the Old World
A survey of Old World Prehistory from the Paleolithic to the Bronze Age. Basic concepts used in reconstructing prehistoric cultures, and the artifactual, fossil, and contextual evidence for the evolution of humans and culture. (Lecture/Tutorial) Prerequisite: ARCH 101 or 131.

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. (Lecture/Tutorial) Prerequisite: ARCH 101.

ARCH 301-3 Prehistoric and Primitive Art
Art styles and traditions of prehistoric and preliterate peoples in one or more world cultural areas. (Lecture)
ARCH 330-3 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. (Seminar) Prerequisites: ARCH 101 and 273.

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. (Lecture/Seminar)

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. (Lecture/Seminar) Prerequisite: any lower division Archaeology course.

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. (Lecture/Seminar) Prerequisite: any lower division Archaeology course.

ARCH 335-5 Special Topics in Archaeology IV
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. (Lecture/Seminar) Prerequisite: any lower division Archaeology course.

ARCH 336-3 Special Topics in Prehistoric and Primitive Art
Art styles and traditions of prehistoric and preliterate peoples in selected world cultural areas. (Lecture/Seminar)

ARCH 340-5 Introductory 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. (Lecture/Laboratory) Prerequisite: ARCH 101.

ARCH 344-3 Primate Behavior
The evolution of the primate order and the ecology and behavior characterising the different grades of primates: prosimians, monkeys, and apes. Current trends in interpreting primate behavior are emphasized. (Lecture/Seminar) Prerequisite: ARCH 131 or any lower division Biology course.

ARCH 350-0 Practicum I
First semester of work experience in the Archaeology Co-operative Education Program. Prerequisites: normally 30 semester hours with a CGPA of 3.0 including: both ARCH 101 and 131; either 272 or 273; and three of 372, 373, 376, 377, 386, 442.

ARCH 351-0 Practicum II
Second semester of work experience in the Archaeology Co-operative Education program. Prerequisites: normally 30 semester hours with a CGPA of 3.0 including: both ARCH 101 and 131; either 272 or 273; and three of 372, 373, 376, 377, 386, 442; and ARCH 350.

ARCH 360-5 Native Cultures of North America
Comparative study of the traditional cultures of North American natives north of Mexico: prehistory, contact history, languages, beliefs, and customs. (Lecture/Seminar) Prerequisites: ARCH 101 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. (Seminar) Prerequisite: ARCH 101.

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. (Seminar) Prerequisite: ARCH 101.
ARCH 372-5 Archaeology Laboratory Techniques
Analysis and interpretation of archaeological data. 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. (Lecture/Laboratory) Prerequisite: ARCH 101.

ARCH 373-5 Human Osteology
A detailed study of the human skeleton with emphasis on lab and field techniques. (Laboratory) Prerequisite: ARCH 131.

ARCH 374-3 Prehistory of South and East Asia
Survey of the prehistoric development and cultural origin(s) of Japan, China, Mainland Southeast Asia, and India. (Lecture) Prerequisite: ARCH 101.

ARCH 375-5 Quantitative Methods in Archaeology
Theory, method, and operation of the application of statistical techniques to the description, classification, analysis, and interpretation of archaeological data. (Lecture/Laboratory) Prerequisites: ARCH 101, and either STAT 103 or PSYC 210.

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. (Lecture/Seminar/Laboratory) Prerequisites: ARCH 101 and one lower division ARCH course.

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. (Lecture) Prerequisite: ARCH 131.

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. (Lecture/Seminar) Prerequisite: ARCH 101.

ARCH 390-5 Introduction to 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. (Lecture/Laboratory) Prerequisites: ARCH 101 and either 272 or 273.

ARCH 410-5 Advanced Archaeometry
The explanation and application of various physical science techniques to archaeology. (Lecture/Laboratory) Prerequisite: PHYS 181.

ARCH 411-5 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. (Lecture/Laboratory) Prerequisite: PHYS 181.

ARCH 432-5 Advanced Physical Anthropology
An intensive investigation of the theory and problem areas in physical anthropology. (Lecture/Laboratory/Seminar) Prerequisites: ARCH 131, 373, and either 344 or 385.

ARCH 433, 434, 435 and 436 are normally taken as a block in one semester as the Archaeological Field School. Students enrolling for these courses must seek permission from the Archaeology Department before final registration.
ARCH 433-5 Techniques of Inquiry

ARCH 434-5 Techniques of Inquiry

ARCH 435-2 Field Reports
Requires the presentation of a field report by the student of his/her Field School methods, field experiences, findings, and conclusions done in ARCH 433 and 434. A critical evaluation of the field experiment is also expected. Available only to students who are completing ARCH 433 and 434.

ARCH 436-3 Readings in Archaeology
Readings in particular topics will be arranged for students under the direction of a faculty member. Normally taken in conjunction with ARCH 433, 434, and 435.

ARCH 438-5 Geoarchaeology
The application of techniques of sedimentology and pedology to the analysis of archaeological deposits. (Lecture/Laboratory) Prerequisite: ARCH 272 or 273.

ARCH 442-5 Forensic Anthropology
Current techniques in identification of recent human skeletal remains. (Lecture/Lab/Seminar) Prerequisites: ARCH 131 and ARCH 373.

ARCH 450-0 Practicum III
Third semester of work experience in the Archaeology Co-operative Education Program. Prerequisites: normally 30 semester hours with a CGPA of 3.0 including: both ARCH 101 and 131; either 272 or 273; three of 372, 373, 376, 377, 386, 442; and ARCH 351.

ARCH 451-0 Practicum IV
Fourth semester of work experience in the Archaeology Co-operative Education Program. Prerequisites: normally 30 semester hours with a CGPA of 3.0 including: both ARCH 101 and 131; either 272 or 273; three of 372, 373, 376, 377, 386, 442; and ARCH 450.

ARCH 471-5 Archaeological Theory
The cultural, evolutionary, physical, and distributional principles which underlie the prediction and reconstruction of the past. (Lecture/Seminar) Prerequisites: ARCH 101, 131, 272 and 273.

ARCH 474-3 Regional Studies in Archaeology: North America - 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 476-5 Regional Studies in Archaeology: North America - Northwest Pacific
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 480-5 Directed Readings
Directed readings for upper level students who desire to study in depth selected topics. Prerequisite: permission of the department.

ARCH 485-5 Lithic Technology
An in-depth study of how to manufacture and analyse stone tools. Includes rock and mineral identification, stone working by students, fracture mechanics, and relevance to theoretical problems. (Lecture/Laboratory) Prerequisites: ARCH 101 and ARCH 372.

ARCH 493-5 Directed 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 Essay
An honors essay of some ten to fifteen thousand words will be written under the direction of a faculty member. Prerequisite: permission of the department.

Cognitive Science Program
Co-ordinator: (to be announced)
Advisor: Ms. G. Carlson, 778.782.5739

For further information on the program, contact the Co-ordinator or the Assistant to the Dean of the Faculty of Arts.

The following programs are offered.

BA with a major in Cognitive Science
Honors program in Cognitive Science: option A & option B

In the last twenty years there has been a great surge in research into various aspects of cognition. This work has affected many fields including psychology, linguistics, philosophy, and computing science, as well as education, anthropology, communications, and sociology. The extent of the influence varies from field to field, but the greatest impact within psychology has been on the subfields 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.

People working within these areas find that they read the same literature and ask closely related questions in their research and teaching. It has become evident that an increasing amount of work being done in these fields belongs to a common area which cuts across traditional departmental organization. There are now several journals and many collections of essays which contain articles from each of these fields.

Within the University, this interrelation is reflected in a number of courses which draw on research being done in these areas. Presently, courses in the study of cognition and language are spread over several different departments. The Cognitive Science Program draws many of these together into a unified program, and offers students a structured and integrated study of cognition.

Undergraduate courses
Course descriptions for all Cognitive Science undergraduate courses.

Breadth Requirements
Students enrolled in this program must fulfill the Faculty of Arts breadth requirements (see Faculty of Arts, Breadth Requirements).

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.

Major Program
A GPA of 2.0 or higher in each discipline is required for continuation and graduation. Only courses from each discipline, that satisfy the requirements of the program, will be used to calculate this GPA.

Lower Division Requirements (25-26 hours)

Computing Science
CMPT 101-4 Modula 2 (or 103-3 and 104-2)
CMPT 105-3 Fundamental Concepts of Computing

Additionally, for students who choose Computing Science at the Intermediate level, the following must be completed.
MACM 101-3 Discrete Mathematics I

Linguistics
LING 220-3 Introduction to Linguistics

Additionally, students who choose Linguistics at the Intermediate level must complete the following course.

LING 130-3 Practical Phonetics

Philosophy
PHIL 100-3 Knowledge and Reality

Psychology
PSYC 100-3 Introduction to Psychology I
PSYC 102-3 Introduction to Psychology II

Intermediate Courses (22-25 hours)
A student must take COGS 200 plus the courses listed below for at least three of the four disciplines.

Computing Science
CMPT 201-4 Data and Program Organization

Linguistics
LING 221-3 Introduction to Phonology
LING 222-3 Introduction to Syntax

Philosophy
PHIL 210-4 Elementary Formal Logic I

Psychology
PSYC 201-3 Research Methods in Psychology
PSYC 210-3 Data Analysis in Psychology
PSYC 221-3 Cognitive Psychology

Additionally, students who intend to take physiological psychology courses (PSYC 381 and 382) in the upper division must complete the following course.

PSYC 280-3 Biological Bases of Behavior

Upper Division Requirements (30-31 hours)
A student must choose COGS 400, plus fulfill the requirements listed below for the three disciplines selected previously at the intermediate level.

Computing Science
one of
CMPT 383-3 Comparative Programming Languages
CMPT 384-3 Symbolic Computing

plus any two of
CMPT 410-3 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

Linguistics
_any three of_
LING 321-3 Phonology
LING 322-3 Syntax
LING 323-3 Morphology
LING 324-3 Semantics
LING 330-3 Phonetics

Philosophy
_any three of_
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 325-3 Memory
PSYC 330-3 Attention
PSYC 366-3 Language Development
PSYC 367-3 Experimental Psycholinguistics

**Honors Program**
A GPA of 3.0 in all courses in the Cognitive Science Program 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 fulfill 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
MACM 300-3 Formal Languages and Automata with Applications
MACM 402-3 Automata and Formal Languages

*plus any two of the following courses which have not been taken previously*
CMPT 383-3 Comparative Programming Languages
CMPT 384-3 Symbolic Computing
CMPT 411-3 Knowledge Representation
CMPT 412-3 Computational Vision
CMPT 413-3 Computational Linguistics
CMPT 414-3 Model-based Computer Vision
CMPT 419-3 Topics in Artificial Intelligence
Linguistics
any four of
LING 400-3 Formal Linguistics
LING 401-3 Advanced Phonetics
LING 403-3 Advanced Phonology
LING 405-3 Advanced Syntax
LING 406-3 Advanced Semantics
LING 423-3 Advanced Morphology
440-3 History and Philosophy of Linguistics

Philosophy
PHIL 301-3 Epistemology
PHIL 331-3 Selected Topics II
PHIL 340-3 Philosophical Methods
PHIL 453-4 Background to Analytical Philosophy

Psychology
any three of the following courses which have not been taken previously
PSYC 303-3 Perception
PSYC 330-3 Attention
PSYC 381-3 Introduction to Physiological Psychology
PSYC 382-3 Physiology of Complex Behavior
PSYC 425-5 Language and Thinking
PSYC 430-3 Perception

Option B
A student must fulfill the requirements for a major in Cognitive Science and choose any combination of courses listed above totalling at least eleven semester hours and accepted by the Cognitive Science Steering Committee, and choose COGS 490 and 491.

Cognitive Science Undergraduate Courses

Faculty of Arts

COGS 200-3 Basic Cognitive Science
This course provides a basic integrative overview of the linguistic, philosophical, psychological, and computer-science aspects of cognition. (Lecture/Tutorial) Prerequisites: CMPT 101 or 105, PSYC 100. Recommended: LING 220, PHIL 100.

COGS 400-3 Advanced Cognitive Science
This course is an extension of COGS 200 and provides a summative, critical overview of the cognitive-scientific features of the Computing Science, Linguistics, Psychology, and Philosophy courses that make up the core of the program. (Lecture/Tutorial) Prerequisites: at least six credit hours from each of the three required upper level advanced components (18 hours upper division).

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. (Seminar/Tutorial) Prerequisites: 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

Continuation of COGS 490 on a different in-depth investigation of a Cognitive Science topic, culminating in the completion of a substantive piece of research. (Seminar/Tutorial) Prerequisites: approval of Cognitive Science Steering Committee either when student has completed 490-5 or when student is taking 490-5.

School for the Contemporary Arts
Telephone: 778.782.3363
Fax: 778.782.5907
Director: O. Underhill BMus (Vic, BC), MA (NY State)

Professor Emeriti
G. Strate BA, LLB (Alta) - Dance

Professors
S.A. Aloii BA (C'nell), MA (Col) - Dance
M. Diamond BA (W Ont), MA, PhD (Tor) - Theatre
I. Garland BS (Ill), MS (Calif) - Dance
R. Komorous Diploma (State Conservatory of Music, Prague), Artist's Diploma (Academy of Arts, Prague) - Music
B.D. Truax BSc (Qu), MMus (Br Col) - Music*
O. Underhill BMus (Vic, BC), MA (NY State), Director of School - Music

Associate Professors
E.W. Alderson BA (Haverford), MA, PhD (Calif), Dean of Arts - Interdisciplinary
P. Gruben BA (Rice) - Film
J. Levitin BA, MA (Wash), PhD (NY State) - Film**
D. MacIntyre BMus, MMus (Vic, BC) - Music/Interdisciplinary
A. Ramsden BA (Qu), BFA (NSCAD), MFA (C'dia) - Visual Art
G. Snider BSc, MFA (Wis) - Visual Art
P. Stella BA (Ill) - Theatre

Assistant Professors
C.V.A. Browne BA (RMC), MA (S Fraser) - Film
A. Clay BFA (NSCAD), MFA (Br Col) - Visual Art
H. Dawkins BFA (NSCAD), MA, PhD (Leeds) - Interdisciplinary
M. Eister BA (American, Wash), MFA (NY), PhD (Temple) - Dance
J. Garay - Dance
M.S. Gotfrit BA (C'dia), MA (McG) - Music
C. Welsby BA (Chelsea School of Art, London) - Film
J. Yoon BA (Br Col), BFA (ECCAD), MFA (C'dia) - Visual Art

Senior Lecturers
B. Hegland BA (Leth), MFA (Ill) - Interdisciplinary
J.A. Macfarlane BA (Reed), Assistant Director - Interdisciplinary
D. Zapf BMus, MA (Vic, BC) - Music/Interdisciplinary

Lecturers
R. Groeneboer BA (Calvin Coll, Mich) MSc (Wis) - Film
C. Prophet BA (York, Can) - Dance

Laboratory Instructors
A. Smith - Dance, Music
M. Smith - Film

*joint appointment with Communication
**joint appointment with Women's Studies
The School for the Contemporary Arts 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 in each discipline, and students are encouraged to acquire additional practical experience by participating in extracurricular productions, exhibitions or performances.

The School for the Contemporary Arts 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.

Undergraduate courses
Course descriptions for all Contemporary Arts undergraduate courses.

Admission
Admission to all Contemporary Arts programs and courses is contingent upon admission to the University. Contact the Office of the Registrar for information on University admission procedures, requirements and deadlines.

Entry to all programs and to many courses is by audition, interview or application. Contact the office for information on procedures and deadlines.

Although the University operates on a trimester system, most FPA courses are planned in a two semester (Fall and Spring) sequence. Consequently, students seek Fall semester (September) entry to School for the Contemporary Arts programs and are advised to contact the school in the preceding January for information on program entry and program requirements.

Transfer Credit and Advanced Placement
Unassigned or general elective (Type 2 and 3, respectively) transfer credit which has been awarded for courses completed at other recognized post-secondary institutions, will not automatically entitle students to advanced placement in the School's programs. Advanced placement is generally given on an individual basis as a result of an audition or interview.

Programs Offered
The School for the Contemporary Arts offers the following programs.

Major in Critical Studies in the Arts (BA)
Major in Dance (BFA)
Major in Film (BFA)
Major in Music (BFA)
Major in Theatre (BFA)
Major in Visual Art (BFA)
Extended Minor in Dance
Extended Minor in Film
Extended Minor in Music
Extended Minor in Theatre
Extended Minor in Visual Arts
Minor in FPA
Minor in Film and Video Studies
Master of Fine Arts - see Graduate Studies
Bachelor of Arts Degree Program

Critical Studies in the Arts Major Program
This program, leading to the Bachelor of Arts, provides interdisciplinary grounding in fine and performing arts, with emphasis on contemporary approaches. The program core consists of lectures and seminars that address important historical, critical and theoretical issues across the arts. Beyond the core requirements, the program permits substantial flexibility in course selection, both within and outside of the School for the Contemporary Arts, to encourage students to shape programs in accord with their particular interests. Although the program is not oriented toward artistic practice, it requires some exposure to practical art making, as well as to the history of individual art forms.

Lower Division Requirements
Students are required to complete 23-24 credit hours, as follows.

Interdisciplinary Theory Core Courses
all of
FPA 111-3 Issues in the Fine and Performing Arts
FPA 211-3 Introduction to Contemporary Theory in the Arts
FPA 216-3 Introduction to the Fine and Performing Arts in Canada

Disciplinary History Courses
two of
FPA 127-3 History of Dance: Origins to the 20th Century
FPA 136-3 The History and Aesthetics of Cinema I
FPA 137-3 The History and Aesthetics of Cinema II
FPA 140-3 Music in the 20th Century
FPA 150-3 Basics of Theatre
FPA 166-3 History of Art: Ancient to Renaissance
FPA 167-3 History of Art: Renaissance to Modern
FPA 168-3 History of Art: 20th Century
FPA 227-3 History of Dance: The 20th Century
FPA 242-3 Western Music in the 17th Through 19th Centuries

Studio Courses
two of
FPA 104-3 Music Fundamentals
FPA 120-3 Introduction to Contemporary Dance
FPA 121-3 Contemporary Dance Fundamentals
FPA 129-3 Fundamental Integration of Human Movement
FPA 130-4 Fundamentals of Film
FPA 131-4 Filmmaking I
FPA 141-3 Introduction to Music Performance
FPA 145-3 Introduction to Music Composition and Theory
FPA 151-3 Introduction to Acting I
FPA 152-3 Introduction to Acting II
FPA 160-3 Introductory Studio in Visual Art I
FPA 161-3 Introductory Studio in Visual Art II
FPA 163-3 Issues in Spatial Presentation
FPA 170-3 Introduction to Technical Theatre
FPA 171-3 Stage and Production Management
FPA 230-5 Fundamentals of Film
FPA 231-3 Filmmaking I

Note: With permission, other studio courses can substituted for those listed.

Additional Theory Course
One additional 200 level course from among the following must be completed.
CMNS 259-3 Acoustic Dimensions of Communication I
* FPA 229-3 Selected Topics in Dance I
FPA 236-3 Cinema in Canada
FPA 237-3 Selected Topics in Film and Video Studies
FPA 244-3 Theory of Contemporary Music
* FPA 249-3 Selected Topics in Music I
* FPA 259-3 Selected Topics in Theatre I
* FPA 269-3 Selected Topics in Visual Art I
* FPA 279-3 Selected Topics in the Fine and Performing Arts I
PHIL 242-3 Philosophy of Art

*These courses may be offered with either a practical (studio) or a theoretical orientation, or a combination of the two. They may only count toward this requirement when they have a strong theoretical component.

Note: Some courses listed have prerequisites beyond those that can be applied to the major requirements.

Note: With permission of the school, other courses that are germane to the student's critical studies program may count toward this requirement.

Upper Division Requirements
A minimum of 35 credit hours must be completed as follows.

Interdisciplinary Theory Core
Two courses must be completed from the Arts in Context series as follows.

FPA 310-5 The Arts in Context: The Renaissance
FPA 311-5 The Arts in Context: Selected Topics
FPA 312-5 The Arts in Context: Baroque and Enlightenment
FPA 313-5 The Arts in Context: Romanticism
FPA 314-5 The Arts in Context: Modernism
FPA 315-5 The Arts in Context: The Contemporary Period

plus both of
FPA 411-5 Selected Topics in Contemporary Theory
FPA 412-5 Senior Seminar in Critical Studies

Additional Critical Studies Courses
At least six credit hours from the following must be completed.

FPA 328-3 History of Dance: The 20th Century
FPA 335-4 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 359-3 Selected Topics in Theatre II
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 379-3 Selected Topics in the Fine and Performing Arts II
FPA 382-3 Aesthetics of Performance
FPA 384-3 Criticism of Performance
* FPA 388-3 Directed Studies in Fine and Performing Arts I
FPA 426-3 Dance/Movement Analysis
FPA 429-3 Directed Studies in Dance Research
FPA 436-3 Advanced Seminar in Film and Video Studies
FPA 456-3 Conceptual Approaches to Drama
or additional courses from the Arts in Context series.

*These courses may be offered with either a practical (studio) or a theoretical orientation, or a combination of the two. They may only count toward this requirement when they have a strong theoretical component.

The additional nine required credit hours may be drawn from any of the above, or from approved courses in other departments, including any of the following.

ARCH 301-3 Prehistoric and Primitive Art
ARCH 336-3 Special Topics in Prehistoric and Primitive Art
CMNS 321-4 The Cultural Production of Popular Music
CMNS 334-4 Cultural Policy
CMNS 422-4 Media and Ideology
ENGL 310-4 Elizabethan and Jacobean Drama
ENGL 312-4 Shakespeare
ENGL 364-4 History and Principles of Literary Criticism
ENGL 368-4 Studies in Drama
GS 304-3 Richard Wagner: The Ring of the Nibelung
HIST 303-3 Museum Methods and Use
HIST 385-3 Canadian and BC Art
PHIL 325-3 Philosophy of Art II
SA 416-4 Sociology of Art Forms

Notes:
Several of the above listed courses have prerequisites beyond those that can be applied to the major requirements; waiver of any prerequisites for critical studies majors can only be made by the department offering the course.

With permission of the school, other courses that are germane to the student's critical studies program may be counted toward this requirement.

The courses to be listed from other departments will be the subject of careful discussions with those departments.

**Bachelor of Fine Arts Degree Program**

**Dance Major Program**

The BFA major in dance approaches dance as an art form and combines creative and technical studio courses. Emphasis is given to contemporary dance technique, composition and experimentation. Courses are also offered in fundamental body work, 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.

In addition to the 84 credits outlined below, students are required to fulfill the 30 credit Faculty of Arts breadth requirement within the minimum 120 credits required for the BFA degree.

Entry to the dance program is by audition, usually scheduled for early Spring and late Summer. Contact the school to make an audition appointment.

Students who do not have sufficient background to audition for entry into the major program may register in FPA 120.

The attention of students whose interest in dance is related primarily to its historical, critical, or theoretical aspects, is directed to the Critical Studies in the Arts major program, leading to a BA degree.

**Lower Division Requirements**
A minimum of 42 credit hours must be completed including the following.
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 127-3 History of Dance: Origins to the 20th Century
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: The 20th Century
FPA 228-3 Dance Composition II

plus two FPA courses other than dance.

Recommended Courses
FPA 104-3 Music Fundamentals
FPA 140-3 Music in the 20th Century
FPA 141-3 Introduction to Music Performance
FPA 147-3 Introduction to Electroacoustic Music
FPA 151-3 Introduction to Acting I
FPA 152-3 Introduction to Acting II
FPA 160-3 Introductory Studio in Visual Art I
FPA 163-3 Issues in Spatial Presentation
FPA 170-3 Introduction to Technical Theatre
FPA 171-3 Stage and Production Management
FPA 211-3 Introduction to Contemporary Theory in the Arts
FPA 216-3 Introduction to the Fine and Performing Arts in Canada
FPA 236-3 Cinema in Canada
FPA 252-3 Playmaking I
FPA 290-3 Video Production I

Upper Division Requirements
A minimum of 42 credit hours must be completed including

FPA 320-4 Contemporary Dance V
FPA 321-4 Contemporary Dance VI
FPA 426-3 Dance/Movement Analysis

*plus 23 credit hours selected from the following.
FPA 322-3 Ballet I
FPA 323-3 Ballet II
FPA 324-3 New Dance Composition
FPA 325-3 Special Project in Dance Composition
FPA 326-3 Repertory I
FPA 327-3 Repertory II
FPA 420-4 Contemporary Dance VII
FPA 421-4 Contemporary Dance VIII
FPA 423-3 Directed Studies in Choreography
FPA 424-3 Directed Performance in Selected Repertory
FPA 425-5 Intensive Studies in Dance
FPA 427-3 Ballet III
FPA 428-3 Ballet IV
429-3 Directed Studies in Dance Research

*Other dance related courses may be substituted with permission of the school.
plus one of
FPA 310-5 The Arts in Context: The Renaissance
FPA 311-5 The Arts in Context: Selected Topics
FPA 312-5 The Arts in Context: Baroque and Enlightenment
FPA 313-5 The Arts in Context: Romanticism
FPA 314-5 The Arts in Context: Modernism
FPA 315-5 The Arts in Context: The Contemporary Period

**plus one of
FPA 341-3 World Music
FPA 370-3 Introduction to Stage Design
FPA 382-3 Aesthetics of Performance
FPA 384-3 Criticism of Performance
FPA 456-3 Conceptual Approaches to Drama

**other FPA courses outside of dance may be substituted with prior permission of the school.

Film Major Program
The intent of the BFA Major in Film is to provide a balanced program of creative, technical and analytical studies within the interdisciplinary setting of the School for the Contemporary Arts. Film and video production courses emphasize the creation of original work as well as the acquisition of technical skills. Film courses which familiarize students with the aesthetic and social issues surrounding contemporary film and video practice are an integral part of the curriculum. Students augment their understanding of the components of film and video through interdisciplinary studies and projects. Directed study courses are available for upper division students wishing to work independently beyond regular course offerings.

Entry to all film production courses is by questionnaire and interview. Contact the school by early February 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.

The attention of students whose interest in film is related primarily to its historical, critical, or theoretical aspects, is directed to the Critical Studies in the Arts major program, leading to a BA degree, and to the film and video studies minor program.

Lower Division Requirements
A minimum of 44 credit hours must be completed 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 two of
FPA 236-3 Cinema in Canada
FPA 237-3 Selected Topics in Film and Video Studies
FPA 238-3 Screenwriting I

*With prior permission, students may substitute courses from other departments devoted to a film or video topic to fulfill this requirement.

**plus six credit hours of lower division FPA studio courses outside Film. The following are recommended.
FPA 147-3 Introduction to Electroacoustic Music
FPA 151-3 Introduction to Acting I
FPA 163-3 Issues in Spatial Presentation
FPA 170-3 Introduction to Technical Theatre

**Students may apply one of FPA 290 or CMNS 258 toward this requirement.

plus one of
FPA 211-3 Introduction to Contemporary Theory in the Arts
FPA 216-3 Introduction to the Fine and Performing Arts in Canada
or another FPA history or critical course outside Film.

Upper Division Requirements
A minimum of 36 credit hours must be completed including the following.

FPA 335-4 Introduction to Film Theory

*plus two of
FPA 337-3 Intermediate Selected Topics in Film and Video Studies
FPA 436-3 Advanced Seminar in Film and Video Studies
FPA 437-3 Directed Study in Film Studies I

*With prior permission of the Film area, students may substitute courses devoted to a film or video topic in other departments to fulfill this requirement.

plus a minimum of 19 credit hours from the following
FPA 330-3 Film Sound
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 431-5 Group Project in Film
FPA 432-5 Filmmaking V
FPA 434-3 Selected Topics in Film and Video Production II
FPA 439-3 Directed Study in Film and Video

plus two of
FPA 310-5 The Arts in Context: The Renaissance
FPA 311-5 The Arts in Context: Selected Topics
FPA 312-5 The Arts in Context: Baroque and Enlightenment
FPA 313-5 The Arts in Context: Romanticism
FPA 314-5 The Arts in Context: Modernism
FPA 315-5 The Arts in Context: The Contemporary Period

or one of the above and another upper division FPA history or critical course outside Film.

**Music Major Program**
The Bachelor of Fine Arts - Major in Music is a flexible program that offers several options for the music student who wishes 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 take 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.

In addition to the 85 credit hours that constitute the BFA - Major in Music, students are required to fulfill the 30 credit hours of Faculty of Arts Breadth Requirements, within the total of the 120 credit hours required for the degree.

The attention of students whose interest in music is related primarily to its historical, critical, or theoretical aspects, is directed to the Critical Studies in the Arts major program, leading to a BA degree.

Lower Division Requirements
Students must complete a minimum of 42 credit hours including all of

- FPA 111-3 Issues in the Fine and Performing Arts
- FPA 140-3 Music in the 20th Century
- FPA 145-3 Introduction to Music Composition and Theory
- FPA 147-3 Introduction to Electroacoustic Music
- FPA 242-3 Western Music in the 17th through 19th Centuries
- FPA 244-3 Theory of Contemporary Music
- FPA 245-3 Music Composition I

plus two of
- FPA 141-3 Introduction to Music Performance
- FPA 240-3 Contemporary Music Performance I
- FPA 243-3 Gamelan I

plus one of
- FPA 246-3 Music Composition II
- FPA 247-3 Electroacoustic Music I

plus one of
- FPA 249-3 Selected Topics in Music I
- CMNS 258-3 Introduction to Electroacoustic Communication

plus one of
- FPA 127-3 History of Dance: Origins to the 20th Century
- FPA 136-3 The History and Aesthetics of Cinema I
- FPA 137-3 The History and Aesthetics of Cinema II
- FPA 150-3 Basics of Theatre
- FPA 166-3 History of Art: Ancient to Renaissance
- FPA 167-3 History of Art: Renaissance to Modern
- FPA 168-3 History of Art: 20th Century
- FPA 211-3 Introduction to Contemporary Theory in the Arts
- FPA 216-3 Introduction to the Fine and Performing Arts in Canada
- FPA 227-3 History of Dance: 20th Century

plus two FPA studio courses outside Music.

Upper Division Requirements
A minimum of 43 credit hours must be completed, which is comprised of 24 credit hours selected from the list below, of which 9 credit hours must be at the 400 division.
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 349-3 Selected Topics in Music II  
FPA 443-3 Gamelan III  
FPA 445-3 Music Composition V  
FPA 446-3 Music Composition VI  
FPA 447-3 Computer Music Composition  
FPA 448-3 Directed Study in Music I  
FPA 449-3 Directed Study in Music II

*plus two of  
FPA 310-5 The Arts in Context: The Renaissance  
FPA 311-5 The Arts in Context: Selected Topics  
FPA 312-5 The Arts in Context: Baroque and Enlightenment  
FPA 313-5 The Arts in Context: Romanticism  
FPA 314-5 The Arts in Context: Modernism  
FPA 315-5 The Arts in Context: The Contemporary Period

*of which one must be FPA 314 or 315.

plus two FPA courses other than music (CMNS 358 or 359 may be substituted for one of these FPA non-music courses).

plus three additional credit hours in an upper level FPA course. An additional music course may be used for this requirement.

**Theatre Major Program**

The Bachelor of Fine Arts - Major in Theatre emphasizes the development of an all-round theatre artist. The studio courses in theatre are supplemented by courses in dramatic literature, theatre history, playmaking, and technical theatre.

Courses chosen from disciplines outside theatre give the program a significant interdisciplinary component. Students are encouraged to participate in productions and to develop their own scripts and performance pieces.

In addition to the 83 credit hours required for the BFA - Major in Theatre, students are required to fulfill the 30 credit hour Faculty of Arts Breadth Requirement, within the 120 credit hours required for the degree.

Entry to FPA 250, 252, 254 and to the major in theatre is by audition, usually scheduled for early Spring and late Summer. Contact the general office to make an audition appointment.

Students who wish to enroll in the Theatre major program normally take FPA 151 and 152, and are advised to take other required courses, prior to auditioning for entry to the program.

Students whose interest in theatre is related primarily to historical, critical, or theoretical aspects, is directed to the Critical Studies in the Arts major program, leading to a BA degree. Students whose primary interest is technical theatre and design are referred to the theatre extended minor program.

**Lower Division Requirements**

A minimum of 42 credit hours must be completed including all of

FPA 111-3 Issues in Fine and Performing Arts  
FPA 151-3 Introduction to Acting I  
FPA 152-3 Introduction to Acting II  
FPA 170-3 Introduction to Technical Theatre
FPA 250-3 Acting I
FPA 251-3 Acting II
FPA 252-3 Playmaking I
FPA 253-3 Playmaking II
FPA 254-3 Theatre Laboratory I
FPA 255-3 Theatre Laboratory II

plus one of
FPA 171-3 Stage and Production Management
FPA 270-3 Technical Theatre

plus one of
FPA 127-3 History of Dance: Origins to the 20th Century (or FPA 227)
FPA 136-3 The History and Aesthetics of Cinema I
FPA 137-3 The History and Aesthetics of Cinema II
FPA 150-3 Basics of Theatre
FPA 166-3 History of Art: Ancient to Renaissance
FPA 167-3 History of Art: Renaissance to Modern
FPA 168-3 History of Art: 20th Century
FPA 211-3 Introduction to Contemporary Theory in the Arts
FPA 216-3 Introduction to the Fine and Performing Arts in Canada
FPA 242-3 Western Music in the 17th Through 19th Centuries

plus two FPA studio courses other than Theatre.

Upper Division Requirements
A minimum of 41 credit hours must be completed including all of

FPA 350-3 Acting III
FPA 351-3 Acting IV
FPA 354-3 Theatre Laboratory III
FPA 355-3 Theatre Laboratory IV
FPA 358-2 Speech and Oral Interpretation I
FPA 454-2 Speech and Oral Interpretation II

plus five of
FPA 339-3 Directing and Acting for Film and Video
FPA 338-3 Screenwriting II
FPA 352-3 Playmaking III
FPA 353-3 Playmaking IV
FPA 359-3 Selected Topics in Theatre II
FPA 370-3 Introduction to Stage Design
FPA 372-3 Technical Production I
FPA 373-3 Technical Production II
FPA 379-3 Selected Topics in the Fine and Performing Arts II
FPA 382-3 Aesthetics of Performance
FPA 384-3 Criticism of Performance
FPA 388-3 Directed Studies in Fine and Performing Arts I
FPA 390-3 Video Production II
FPA 426-3 Dance/Movement Analysis
FPA 450-3 Advanced Studio Skills I
FPA 453-3 Theory and Practice of Directing
FPA 456-3 Conceptual Approaches to Drama
FPA 458-3 Directed Studies in Theatre I

*plus two of
FPA 310-5 The Arts in Context: The Renaissance
FPA 311-5 The Arts in Context: Selected Topics
FPA 312-5 The Arts in Context: Baroque and Enlightenment
FPA 313-5 The Arts in Context: Romanticism
FPA 314-5 The Arts in Context: Modernism
FPA 315-5 The Arts in Context: The Contemporary Period

*of which one must be FPA 314 or 315.

**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 in conjunction with integrated theoretical and critical seminars allows students to understand their own production in relation to current and historical developments in visual art and other disciplines. A strong emphasis is placed on developing an understanding of the position and responsibilities of the artist as part of a larger social community in the contemporary world.

Entry to Visual Art studio courses, and to the Visual Art major program is by interview. Contact the general office to make an appointment, and to request an information letter. Students must have completed first year requirements and be registered in FPA 260, when applying to the major program.

Students are required to complete a total of 83 credit hours in the school, plus the additional Faculty of Arts breadth requirements of 30 credit hours, within the total of 120 hours required for the degree.

The attention of students whose interest in visual art is related primarily to its historical, critical, or theoretical aspects, is directed to the Critical Studies in the Arts major program, leading to a BA degree.

**Lower Division Requirements**
A minimum of 43 credit hours must be completed including all of

FPA 111-3 Issues in Fine and Performing Arts
FPA 160-3 Introductory Studio in Visual Art I
FPA 161-3 Introductory Studio in Visual Art II
FPA 164-2 Visual Art Techniques: Photography, Video
FPA 165-2 Visual Art Techniques: Painting, Sculpture
FPA 168-3 History of Art: 20th Century
FPA 211-3 Introduction to Contemporary Theory in the Arts
FPA 260-3 Studio in Visual Art I
FPA 261-3 Studio in Visual Art II

*plus one of*
FPA 166-3 History of Art: Ancient to Renaissance
FPA 167-3 History of Art: Renaissance to Modern

*plus two of*
FPA 163-3 Issues in Spatial Presentation
FPA 262-3 Drawing I
FPA 263-3 Painting I
FPA 264-3 Sculpture I
FPA 265-3 Photography I
FPA 269-3 Selected Topics in Visual Art I

*plus one of*
FPA 127-3 History of Dance: Origins to the 20th Century
FPA 136-3 The History and Aesthetics of Cinema I
FPA 137-3 The History and Aesthetics of Cinema II
FPA 140-3 Music in the 20th Century
FPA 150-3 Basics of Theatre
FPA 227-3 History of Dance: 20th Century
FPA 242-3 Western Music in the 17th Through 19th Centuries

plus two FPA courses other than Visual Art, one of which must be a studio.

Upper Division Requirements
A minimum of 40 credit hours must be completed 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 Directed Studio in Visual Art V
FPA 461-3 Studio in Visual Art VI

plus two of
FPA 362-3 Drawing II
FPA 363-3 Painting II
FPA 364-3 Sculpture II
FPA 365-3 Photography II
FPA 369-3 Selected Topics in Visual Art II

plus two of
FPA 335-4 Introduction to Film Theory
FPA 370-3 Introduction to Stage Design
FPA 379-3 Selected Topics in the Fine and Performing Arts II
FPA 382-3 Aesthetics of Performance
FPA 384-3 Criticism of Performance
FPA 388-3 Directed Studies in Fine and Performing Arts I
FPA 390-3 Video Production II
FPA 411-3 Selected Topics in Contemporary Theory
FPA 412-3 Senior Seminar in Critical Studies
FPA 426-3 Dance/Movement Analysis
FPA 469-3 Directed Project in Visual Art
FPA 490-5 Advanced Video and Electronic Cinema Production

Note: With permission other upper level courses germane to the student's visual art program may count toward this requirement. Students should be aware that some of these courses have prerequisite requirements beyond those that can be applied to the major requirement.

*plus two of
FPA 310-5 The Arts in Context: The Renaissance
FPA 311-5 The Arts in Context: Selected Topics
FPA 312-5 The Arts in Context: Baroque and Enlightenment
FPA 313-5 The Arts in Context: Romanticism
FPA 314-5 The Arts in Context: Modernism
FPA 315-5 The Arts in Context: The Contemporary Period

*of which one must be FPA 314 or 315.

Minor Programs

Fine and Performing Arts Minor
The FPA minor program can accommodate a wide range of interests in the fine and performing arts, but some exposure to both the practical and the theoretical aspects of art is assured by the studio course requirement at the lower division and the 'Arts in Context' requirement at the upper division.
Lower Division Requirements
A minimum of 12 semester hours in FPA must be completed including one studio course.

Upper Division Requirements
A minimum of 17 semester hours in FPA must be completed including at least one Arts in Context course (FPA 310, 312, 313, 314, 315).

Film and Video Studies Minor
The Film and Video Studies minor focuses on theoretical, analytical, historical and critical aspects of film and video.

Lower Division Requirements
A minimum of 12 credit hours must be completed including the following.

FPA 136-3 The History and Aesthetics of Cinema I
FPA 137-3 The History and Aesthetics of Cinema II

plus two of
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 credit hours must be completed including the following.

one of
FPA 310-5 The Arts in Context: The Renaissance
FPA 312-5 The Arts in Context: Baroque and Enlightenment
FPA 313-5 The Arts in Context: Romanticism
** FPA 314-5 The Arts in Context: Modernism
** FPA 315-5 The Arts in Context: The Contemporary Period

plus 12 hours 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

**recommended

*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 of these courses to fulfill their requirements, up to a maximum of 6 credit hours.

Dance Extended Minor
The Extended Minor in Dance is intended primarily for students pursuing a BA general degree with a view to teaching dance in the public schools, but may be also used in combination with other academic interests. 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 and the extended minor in dance is by audition, usually scheduled for early Spring and late Summer. Contact the general office to make an audition appointment.

Students who do not have sufficient dance training to audition for entry into this program may register in FPA 120.
Lower Division Requirements
A minimum of 28 semester hours in Dance must be completed including all of

FPA 122-4 Contemporary Dance I
FPA 123-4 Contemporary Dance II
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

one of
FPA 127-3 History of Dance: Origins to the 20th Century
FPA 227-3 History of Dance: The 20th Century

one of
FPA 104-3 Music Fundamentals
FPA 111-3 Issues in the Fine and Performing Arts
FPA 140-3 Music in the 20th Century
FPA 141-3 Introduction to Music Performance
FPA 151-3 Introduction to Acting I
FPA 170-3 Introduction to Technical Theatre

Upper Division Requirements
A minimum of 17 credit hours in Dance must be completed including the following.

all of
FPA 320-4 Contemporary Dance V
FPA 321-4 Contemporary Dance VI
FPA 426-3 Dance/Movement Analysis

plus six credit hours minimum selected from the following

FPA 322-3 Ballet I
FPA 323-3 Ballet II
FPA 325-3 Special Project in Dance Composition
FPA 326-3 Repertory I
FPA 327-3 Repertory II
FPA 420-4 Contemporary Dance VII
FPA 421-4 Contemporary Dance VIII
FPA 424-3 Directed Repertory

Film Extended Minor
The Extended Minor in Film is designed for students who wish to apply their studies in a broad range of other programs within the University to film and video production. Film has affinities with many other disciplines, including social sciences and humanities, English, business and Communications. Students from other areas of Contemporary Arts may develop specific skills such as composing for film, multimedia installation, or directing actors by combining an extended minor in film with another in the appropriate area.

Entry to all film production courses is by questionnaire and interview. Contact the school by early February to request an information letter and questionnaire.

Lower Division Requirements
A minimum of 32 credit hours must be completed including
all of
FPA 111-3 Issues in the Fine and Performing Arts
FPA 130-4 Fundamentals of Film
FPA 131-4 Filmmaking I
FPA 230-5 Filmmaking II
FPA 231-5 Filmmaking III
FPA 233-2 The Techniques of Film

plus two of
FPA 136-3 The History and Aesthetics of Cinema I
FPA 137-3 The History and Aesthetics of Cinema II
FPA 236-3 Cinema in Canada
FPA 237-3 Selected Topics in Film and Video Studies

plus one of
FPA 120-3 Introduction to Contemporary Dance
FPA 147-3 Introduction to Electroacoustic Music
FPA 151-3 Introduction to Acting I
FPA 163-3 Issues in Spatial Presentation
FPA 170-3 Introduction to Technical Theatre
FPA 211-3 Introduction to Contemporary Theory in the Arts
FPA 216-3 Introduction to the Fine and Performing Arts in Canada
FPA 238-3 Screenwriting I
FPA 290-3 Video Production I

Upper Division Requirements
A minimum of 15 credit hours must be completed including at least two of

FPA 330-3 Film Sound
FPA 332-3 Film Production Seminar
FPA 334-3 Selected Topics in Film and Video Production I
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 434-3 Selected Topics in Film and Video Production II

plus one of
FPA 310-5 The Arts in Context: The Renaissance
FPA 311-5 The Arts in Context: Selected Topics
FPA 312-5 The Arts in Context: Baroque and Enlightenment
FPA 313-5 The Arts in Context: Romanticism
FPA 314-5 The Arts in Context: Modernism
FPA 315-5 The Arts in Context: The Contemporary Period

plus 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

Music Extended Minor
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 level program allows students to gain experience in a particular area. Students may use this minor 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 27 credit hours must be completed including

all of
FPA 140-3 Music in the 20th Century
FPA 141-3 Introduction to Music Performance
FPA 145-3 Introduction to Music Composition and Theory
FPA 147-3 Introduction to Electroacoustic Music
FPA 242-3 Western Music in the 17th through 19th Centuries

plus three 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 249-3 Selected Topics in Music I

plus one of
FPA 111-3 Issues in the Fine and Performing Arts
FPA 127-3 History of Dance: Origins to the 20th Century
FPA 136-3 The History and Aesthetics of Cinema I
FPA 137-3 The History and Aesthetics of Cinema II
FPA 150-3 Basics of Theatre
FPA 166-3 History of Art: Ancient to Renaissance
FPA 167-3 History of Art: Renaissance to Modern
FPA 168-3 History of Art: 20th Century
FPA 227-3 History of Dance: 20th Century

Upper Division Requirements
A minimum of 17 credit hours must be completed 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 349-3 Selected Topics in Music II
FPA 443-3 Gamelan III
FPA 445-3 Music Composition V
FPA 447-3 Computer Music Composition

plus one of
FPA 310-5 The Arts in Context: The Renaissance
FPA 311-5 The Arts in Context: Selected Topics
FPA 312-5 The Arts in Context: Baroque and Enlightenment
FPA 313-5 The Arts in Context: Romanticism
FPA 314-5 The Arts in Context: Modernism
FPA 315-5 The Arts in Context: The Contemporary Period

plus three additional credit hours in an upper division FPA course. An additional music course may be used to fulfill this requirement.
**Theatre Extended Minor**
This program is for the student with an interest in the technical, design and administrative aspects of theatre. Interdisciplinary requirements place the study of theatre in the context of contemporary art theory and practice.

**Lower Division Requirements**
A minimum of 27 credit hours must be completed including

- FPA 111-3 Issues in the Fine and Performing Arts
- FPA 150-3 Basics of Theatre
- FPA 151-3 Introduction to Acting
- FPA 152-3 Introduction to Acting II
- FPA 170-3 Introduction to Technical Theatre
- FPA 171-3 Stage and Production Management
- FPA 270-3 Technical Theatre

two of
- FPA 104-3 Music Fundamentals
- FPA 120-3 Introduction to Contemporary Dance
- FPA 127-3 History of Dance: Origins to the 20th Century
- FPA 136-3 The History and Aesthetics of Cinema I
- FPA 137-3 The History and Aesthetics of Cinema II
- FPA 140-3 Music in the 20th Century
- FPA 147-3 Introduction to Electroacoustic Music
- FPA 160-3 Introductory Studio in Visual Art I
- FPA 163-3 Issues in Spatial Presentation
- FPA 166-3 History of Art: Ancient to Renaissance
- FPA 167-3 History of Art: Renaissance to Modern
- FPA 168-3 History of Art: 20th Century
- FPA 211-3 Introduction to Contemporary Theory in the Arts
- FPA 216-3 Introduction to the Fine and Performing Arts in Canada
- FPA 227-3 History of Dance: The 20th Century
- FPA 236-3 Cinema in Canada
- FPA 242-3 Western Music in the 17th through 19th Centuries
- FPA 262-3 Drawing I
- FPA 290-3 Video Production I

**Upper Division Requirements**
A minimum of 17 credit hours must be completed including all of

- FPA 370-3 Introduction to Stage Design
- FPA 372-3 Technical Production I

plus two of
- FPA 371-3 Stage Lighting
- FPA 373-3 Technical Production II
- FPA 379-3 Selected Topics in the Fine and Performing Arts II
- FPA 382-3 Aesthetics of Performance
- FPA 384-3 Criticism of Performance
- FPA 388-3 Directed Studies in Fine and Performing Arts I
- FPA 390-3 Video Production II
- FPA 426-3 Dance/Movement Analysis

plus one of
- FPA 310-5 The Arts in Context: The Renaissance
- FPA 311-5 The Arts in Context: Selected Topics
- FPA 312-5 The Arts in Context: Baroque and Enlightenment
- FPA 313-5 The Arts in Context: Romanticism
**Visual Arts Extended Minor**

Those students who wish to obtain a BA degree by completing two extended minors are directed to the Extended Minor in Visual Art. This program offers a balanced selection of studio, history and theory courses in the Visual Art area, offering students a good introduction to contemporary art issues and practices. Students may use this minor for the purpose of teaching in the schools.

Entry to Visual Art studio courses, and to the extended minor in Visual Art is by interview. Contact the general office to make an appointment.

**Lower Division Requirements**

A minimum of 31 credit hours must be completed 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 164-2 Visual Art Techniques: Photography, Video
- FPA 165-2 Visual Art Techniques: Painting, Sculpture
- FPA 211-3 Introduction to Contemporary Theory in the Arts
- FPA 260-3 Studio in Visual Art I

*one of*

- FPA 166-3 History of Art: Ancient to Renaissance
- FPA 167-3 History of Art: Renaissance to Modern
- FPA 168-3 History of Art: 20th Century

*two of*

- FPA 262-3 Drawing I
- FPA 263-3 Painting I
- FPA 264-3 Sculpture I
- FPA 265-3 Photography I

plus one additional course from the Visual Art area.

**Upper Division Requirements**

A minimum of 17 credit hours must be completed including three of

- FPA 362-3 Drawing II
- FPA 363-3 Painting II
- FPA 364-3 Sculpture II
- FPA 365-3 Photography II
- FPA 369-3 Selected Topics in Visual Art II
- FPA 390-3 Video Production II

*one of*

- FPA 310-5 The Arts in Context: The Renaissance
- FPA 311-5 The Arts in Context: Selected Topics
- FPA 312-5 The Arts in Context: Baroque and Enlightenment
- FPA 313-5 The Arts in Context: Romanticism
- FPA 314-5 The Arts in Context: Modernism
- FPA 315-5 The Arts in Context: The Contemporary Period

plus one additional upper division FPA course. An additional Visual Art course may be used to fulfill this requirement.
Praxis Film Development Workshop
Location: 200 - 1140 Homer Street, Vancouver, BC V6B 2X6
Telephone: 682-3100, 682-7909 Fax
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 for the Contemporary Arts Undergraduate Courses

Faculty of Arts
Notes:

Courses marked with an asterisk (*) may be of particular interest to students in other departments. The subject matter (and prerequisites) of special or selected topics courses vary by semester.

Students are reminded that the School for the Contemporary Arts is an interdisciplinary fine and performing arts department, and are strongly advised to acquaint themselves with the courses available under all of the disciplinary sub-headings below.

Where a prerequisite is or includes "prior approval", approval must be obtained before registering in the course. Contact the school for further information.

FPA courses are listed under one of the six subheads noted below; the discipline is also indicated by the middle digit of the course number.
1, 7 or 8: Interdisciplinary
2: Dance
3: Film
4: Music (also includes FPA 104)
5: Theatre
6: Visual Art
9: Video (Film)

Examples: FPA 120 - Dance; FPA 249 - Music; FPA 111 - Interdisciplinary

Interdisciplinary

*FPA 111-3 Issues in the 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 "Arts in Context" courses. (Lecture/Tutorial)

*FPA 170-3 Introduction to Technical Theatre
A basic introduction to technical theatre emphasizing lighting and sets. The course will include actual production work, along with instruction in practice and theory. (Lecture/Laboratory)

*FPA 171-3 Stage and Production Management
An introduction to the management, and organization of theatrical production. This course will provide a grounding for students who wish to become further involved in the administration of the performing arts and will include practical experience. (Seminar/Open Lab)
FPA 211-3 Introduction to Contemporary Theory in the Arts
This course extends the interdisciplinary study of the arts begun in FPA 111 by introducing some of the basic terms and concepts of contemporary cultural theory. Problems in the interpretation of specific works, selected from across the fine and performing arts, will be approached through concepts derived from semiotics, structuralism, post-structuralism, psychoanalysis and feminist theory. (Lecture-Demonstration/Tutorial) Prerequisite: FPA 111.

FPA 216-3 Introduction to the Fine and Performing Arts in Canada
This course introduces a repertoire of Canadian dance, film, music, theatre and visual art within a context of historical, theoretical, and institutional issues particular to the Canadian context. It will include aspects of Canadian history, institutions and society that inform the arts in Canada. It will also consider contemporary Canadian art practice in relation to theoretical issues and debates around modernism, the avant-garde and post-modernism. (Lecture-Demonstration/Tutorial) Prerequisite: FPA 111.

*FPA 270-3 Technical Theatre
For students who have gained a basic familiarity with technical theatre. The course will offer continued training in staging, audio and lighting for theatre, dance and music presentations. (Lecture/Laboratory) Prerequisite: FPA 170.

*FPA 279-3 Selected Topics in the Fine and Performing Arts I
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 (studio), theoretical, or a combination of the two, depending on the particular topic in a given semester. Prerequisite: prior approval.

*FPA 310-5 The Arts in Context: The Renaissance
A selective study of painting, sculpture, architecture, music, dance and theatre in the context of the Renaissance. (Lecture/Tutorial) Prerequisites: 45 credit hours which must include FPA 111 or another history or critical course within the School for the Contemporary Arts. Students who have completed GS 110 or FPA 110 or 210 may not take FPA 310 for further credit.

*FPA 311-5 The Arts in Context: Selected Topics
A specific topic in an historical/theoretical aspect of the fine and performing arts which is not otherwise covered by the Arts in Context courses. (Lecture/Tutorial) Prerequisites: 45 credit hours which must include FPA 111 or another critical or history course within the School for the Contemporary Arts.

*FPA 312-5 The Arts in Context: Baroque and Enlightenment
A selective study of painting, sculpture, architecture, music, dance and theatre in the context of the 17th century and the first half of the 18th century. (Lecture/Tutorial) Prerequisites: 45 credit hours which must include FPA 111 or another critical or history course within the School for the Contemporary Arts. Students who have completed FPA 212 may not take FPA 312 for further credit.

*FPA 313-5 The Arts in Context: Romanticism
A selective study of painting, sculpture, architecture, music, dance and theatre in the context of the late 18th century and the first half of the 19th century. (Lecture/Tutorial) Prerequisites: 45 credit hours which must include FPA 111 or another critical or history course within the School for the Contemporary Arts. Students who have completed FPA 113 or 213 may not take FPA 313 for further credit.

*FPA 314-5 The Arts in Context: Modernism
A selective study of European painting, sculpture, architecture, music, dance, film and theatre in the context of the late 19th century and the first quarter of the 20th century. (Lecture/Tutorial) Prerequisites: 45 credit hours which must include FPA 111 or another critical or history course within the School for the Contemporary Arts. Students who have completed FPA 114 or 214 may not take FPA 314 for further credit.

*FPA 315-5 The Arts in Context: The Contemporary Period
A selective study of painting, sculpture, architecture, music, dance, film and theatre in the context from about 1920 to the present. (Lecture/Tutorial) Prerequisites: 45 credit hours which must include FPA 111 or another critical or history course within the School for the Contemporary Arts. Students who have completed FPA 215 may not take FPA 315 for further credit.
FPA 370-3 Introduction to Stage Design
For students who have gained the basic knowledge of technical theatre. Students will study various scenographic techniques and be required to solve theoretical problems related to aspects of production. (Seminar/Laboratory) Prerequisite: FPA 170.

FPA 371-3 Stage Lighting
This course 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. (Seminar/Lab) Prerequisites: FPA 270 and prior approval.

FPA 372-3 Technical Production I
Students with basic technical theatre experience will undertake intermediate level production responsibilities. As crew chiefs and stage management personnel, students will be required to research problems in construction, staging and organization of production and to apply their solutions within the production process. (Open Laboratory/Seminar) Co/Prerequisite: FPA 370 and prior approval.

FPA 373-3 Technical Production II
As a continuation of FPA 372-3, students with some intermediate level technical theatre experience will undertake further production responsibilities. As crew chiefs and stage management personnel, students will be required to research problems in construction, staging and organization of production and to apply their solutions within the production process. (Open Laboratory/Seminar) Prerequisite: FPA 370 and prior approval.

*FPA 379-3 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 (studio), theoretical, or a combination of the two, depending on the particular topic in a given semester. Prerequisite: prior approval.

*FPA 382-3 Aesthetics of Performance
This course will examine theatre, dance, and film as public arts. Relationship of form and meaning among these and other modes of performance will be investigated through topics that may vary from semester to semester. This course is specifically designed for students in all study areas of the School for the Contemporary Arts. (Seminar) Prerequisite: 45 semester hours credit.

*FPA 384-3 Criticism of Performance
This course is designed to give students practice and encouragement in articulating their responses to live performances of drama, dance and other forms of theatrical presentation. The course will involve discussions about critical method in relation to various performing arts and about individual productions, as well as attendance at numerous performances and occasional rehearsals. A substantial amount of critical writing will be required. (Seminar) Prerequisite: 45 semester hours credit.

FPA 388-3 Directed Studies in Fine and Performing Arts I
This course is intended to provide an opportunity for advanced students to carry out an independent project which is planned and completed in close consultation with the supervisory instructor. Prerequisites: 6 hours of upper division credit in FPA and prior approval.

FPA 389-3 Directed Studies in Fine and Performing Arts II
This course is intended to provide an opportunity for advanced students to carry out an independent project which is planned and completed in close consultation with the supervisory instructor. Prerequisites: 6 hours of upper level credit in FPA and prior approval.

FPA 411-5 Selected Topics in Contemporary Theory
This course will provide an in-depth investigation of a selected theoretical topic associated with the fine and performing arts. This course requires independent research leading to a substantial paper equivalent to an honors paper, as well as demanding directed reading preparation for seminars. The investigation will include attention to specific works of art. Topics will vary from semester to semester. (Seminar) Prerequisite: at least 45 credit hours including FPA 211 plus one Arts in Context course.
FPA 412-5 Senior Seminar in Critical Studies
The senior seminar in the Critical Studies Major program will consider questions of culture and a selected range of art works within a defined historical and geographical frame. The course will use various theoretical approaches in the consideration of art works and their relationship to their social and historical context. This course requires independent research leading to a substantial paper equivalent to an honors paper, as well as demanding directed reading preparation for seminars. Topics will vary from semester to semester. (Seminar) Prerequisites: at least 45 credit hours including FPA 211 plus one Arts in Context course.

FPA 489-5 Interdisciplinary Project in Fine and Performing Arts
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. (Directed Study) Prerequisites: completion of second year studio in any FPA discipline and prior approval.

Dance

*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. (Studio) Students with credit for PDP 244 or KIN 044 or 144 or FPA 122 may not take FPA 120 for further credit.

*FPA 121-3 Contemporary Dance Fundamentals
Builds on work begun in FPA 120, with emphasis on detailed analysis and practice of the fundamentals of contemporary dance technique. (Studio) Prerequisite: FPA 120. Students with credit for FPA 123 may not take FPA 121 for further credit.

FPA 122-4 Contemporary Dance I
First studio course in a series designed for students intending to pursue a major or extended minor in Dance. Emphasizes work in modern dance and ballet technique and introduces theoretical approaches to modern dance. (Studio) Prerequisite: prior approval as a result of an audition. Dance majors and extended minors must take FPA 129 and 122 concurrently.

FPA 123-4 Contemporary Dance II
Second studio course in a series designed for students intending to pursue a major or extended minor in Dance. Emphasizes work in modern dance and ballet technique and introduces theoretical approaches to modern dance. (Studio) Prerequisite: FPA 122.

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) Prerequisite: dance or theatre experience is recommended.

*FPA 127-3 History of Dance: Origins to the 20th Century
Survey of the function and form of dance from primitive culture through the 19th century ballet in Tsarist Russia. Emphasis will be upon Western theatre dance and evolution of the classical ballet. (Lecture/Seminar) Students with credit for FPA 326 or 327 or KIN 310 may not take FPA 127 for further credit.

*FPA 129-3 Fundamental Integration of Human Movement
This studio/theory course incorporates techniques of body awareness, centering, and structural re-alignment. The course will be of interest to dancers, actors, kinesiologists, and athletes. (Studio) Dance majors and Dance extended minors must take FPA 122 and 129 concurrently.

FPA 220-4 Contemporary Dance III
Studio work designed to development technical facility in movement and acquaint the student with form and style in contemporary dance and ballet. (Studio) Prerequisite: FPA 123.

FPA 221-4 Contemporary Dance IV
Studio work designed to develop technical facility in movement and acquaint the student with form and style in contemporary dance and ballet. (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. (Studio) Prerequisite: FPA 123.

*FPA 227-3 History of Dance: The 20th Century
Study of the development of modern dance and the reformation of the ballet in the 20th century. Emphasis will be placed on seminal dance artists and the impact their work has had upon the art form in Western theatre dance. (Lecture/Seminar) Prerequisite: FPA 127 recommended. Students with credit for FPA 328 may not take this course for further credit.

FPA 228-3 Dance Composition II
This is a continuation of FPA 224-3. Emphasis will be upon source material for choreography with applications of elements of craft. (Studio) Prerequisite: FPA 224-3.

*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 (studio), theoretical, or a combination of the two, depending on the particular topic in a given semester. Prerequisite: FPA 122 and/or prior approval. Contact school.

FPA 320-4 Contemporary Dance V
The first of four upper division courses which build upon the movement vocabulary of modern dance. (Studio) Prerequisite: FPA 221.

FPA 321-4 Contemporary Dance VI
Continues and expands upon the work undertaken in FPA 320. (Studio) Prerequisite: FPA 320.

FPA 322-3 Ballet I
This course explores the vocabulary and movement range of classical ballet technique on the elementary level. 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. (Studio) Prerequisite: FPA 221.

FPA 323-3 Ballet II
This course explores the vocabulary and movement range of classical ballet technique on the lower 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. (Studio) Prerequisite: FPA 322-3.

FPA 324-3 New Dance Composition
This course will explore non-traditional compositional directions in choreography. Emphasis will be on the creation and analysis of work generated by extending the parameters of source, style and form in contemporary dance. (Studio) Prerequisite: FPA 228.

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 semester. (Studio) Prerequisites: 40 credits in FPA courses.

FPA 326-3 Repertory I
This is the first 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. (Studio) Prerequisites: audition and FPA 221 or equivalent. Students are expected to continue the following semester with FPA 327.

FPA 327-3 Repertory II
This is the second 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. (Studio) Prerequisite: FPA 326.
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 (studio), theoretical or a combination of the two, depending on the particular topic in a given semester. Prerequisite: FPA 220 and/or prior approval.

FPA 420-4 Contemporary Dance VII
The third of four upper division courses which build upon the movement vocabulary of modern dance. (Studio) Prerequisite: FPA 321.

FPA 421-4 Contemporary Dance VIII
Continues and expands the work undertaken in FPA 420. (Studio) Prerequisite: FPA 420.

FPA 423-3 Directed Studies in Choreography
Directed project in choreography culminating in public performance. This course is designed to enable talented student choreographers to undertake intensive individual study. Project proposal must be approved prior to registration. (Directed Study) Prerequisite: FPA 228, one of FPA 324 or 325 and prior approval.

FPA 424-3 Directed Study in Selected Repertory
Participation in at least two repertory works staged by faculty or other experienced artists in a specific public presentation. (Directed Study) Prerequisite: FPA 221 and project proposal approved prior to registration. Audition may be required for specific works.

FPA 425-5 Intensive Studies in Dance
Intensive advanced study in particular styles of contemporary dance and/or participation in repertory works staged by experienced artists. (Studio) Prerequisite: prior approval by application.

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. (Studio/Seminar) Prerequisite: FPA 121 or 123 or 151.

FPA 427-3 Ballet III
This course is 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. (Studio) Prerequisite: FPA 323-5.

FPA 428-3 Ballet IV
This is 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. (Studio) Prerequisite: FPA 427-3.

FPA 429-3 Directed Studies in Dance Research
Directed research in dance on a topic selected by the student in consultation with a faculty adviser, leading to the completion of a major essay. (Directed Study) Prerequisite: prior approval.

Film

FPA 130-4 Fundamentals of Film
This course will introduce students to the basic components of film - light, sound, chemical properties, composition within the frame, etc. The medium will be analysed through class lectures, film screenings and creative projects in the various media that combine to form cinema. (Seminar/Laboratory) Prerequisite: prior approval through questionnaire/interview. A laboratory fee is required. Students who have taken FPA 132, 133, 134 or 230 may not take FPA 130 for further credit.

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 soundtrack, as well as participate in the making of class exercises
and other students' films. (Production) Prerequisites: FPA 130 and prior approval. A laboratory fee is required. Students should be advised that filmmaking may require personal funding in addition to the lab fee. Students who completed FPA 230 The Crafts of Film I in Spring 1990 or earlier may not take this course for further credit.

*FPA 136-3 The History and Aesthetics of Cinema I
This course will examine the early development of cinema from 1890 until about 1930, with particular emphasis on the fundamental principles of film as an art form. A substantial number of films will be shown during laboratory sessions. (Lecture/Laboratory) Students with credit for FPA 236 offered in 1982/83 and prior years may not take this course for further credit.

*FPA 137-3 The History and Aesthetics of Cinema II
This course will examine selected developments in cinema from 1930 to the present, with attention to various styles of artistic expression in film. A substantial number of films will be shown during laboratory sessions. (Lecture/Laboratory) Students with credit for FPA 237 offered in 1982/83 and prior years may not take FPA 137 for further credit.

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. (Production) Prerequisites: FPA 131, one of FPA 136 or 137 and prior approval. Co-requisite: FPA 233. A laboratory fee is required. Students should be advised that film production may require personal funding in addition to the lab fees. Students who have taken FPA 330 for credit may not take FPA 230 for further credit.

FPA 231-5 Filmmaking III
This course continues the work begun in FPA 230-3; 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. (Production) Prerequisites: FPA 330, 233 and prior approval. Laboratory fee required. Students should be advised that film production may require personal funding beyond the lab fee.

FPA 233-2 The Techniques of Film
This course covers the technical aspects of basic 16 mm. production skills: camera, lighting, sound, editing, lab processes. These skills are taught as discrete units of instruction, with lab exercises and exams at the end of each unit. (Laboratory) Prerequisites: FPA 231 and prior approval. Corequisite: FPA 230. Laboratory fee required. This course is not a duplicate of FPA 233 Video Production.

*FPA 236-3 Cinema in Canada
The course will explore the concept of ‘national culture’ in the context of increasing globalization of market industrial society. The class will view and discuss Canadian dramatic, documentary and experimental film in relation to the myths and ideologies of our culture. (Lecture/Seminar) Prerequisite: one of FPA 136,137, CMNS 110 or CMNS 120.

*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: National Cinemas; Film and Politics; Canadian Cinema; Documentary Film and Video, etc. Weekly screenings will be accompanied by lecture/tutorial sessions. The course may be repeated for credit if a different topic is taught. (Lecture/Seminar) Prerequisite: FPA 136 or 137.

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. (Seminar) Prerequisites: 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 290-3 Video Production I
This course will emphasize the acquisition of craft skills as well as the creative use of the medium. Students will learn to shoot and edit in both 1/2" and 3/4" formats, and will produce original video tapes alone or in groups. (Production) Prerequisites: 6 hours credit in FPA and prior approval. Students who have taken FPA 233 Video Production for credit may not take FPA 290 for further credit. A laboratory fee is required. Students should be advised that video production may require personal funding beyond the lab fee.

FPA 330-3 Film Sound
Through lectures, demonstrations and studio work, students will be introduced to several aspects of audio post production for film and video. Topics to include synchronization, editing, music scoring and mixing. (Lecture/Lab) Prerequisites: FPA 230, or 147 and 245, and permission of the school. CMNS 258 is highly recommended.

FPA 332-3 Film Production Seminar
This course facilitates an in-depth understanding of the organizational aspects of film production, with emphasis on preproduction planning. The class will study methods of proposal writing, preproduction and production of short films, developing projects for production in FPA 430/432. (Seminar) Prerequisite: FPA 231.

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. Recommended for all film majors. (Laboratory) Prerequisites: FPA 231 and prior approval. A laboratory fee is required. Students who have taken FPA 331 The Crafts of Film III may not take this course for further credit.

FPA 334-3 Selected Topics in Film and Video Production I
This course will cover a specific topic within the field of film and video production not covered in depth in regularly scheduled courses, such as The Apparatus of Cinema, Optical Printing Techniques, Film and/or Video Editing, Film Sound; Video Special Effects, Documentary Film and Video Production. (Seminar/Studio) Prerequisites: FPA 330 and prior approval. This course is not a duplicate of FPA 334-3 Film Analysis, offered prior to 1990-3.

*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. (Lecture/Seminar). Prerequisites: Six credits from among FPA 136, 137, 237. Students who have taken FPA 234 for credit may not take FPA 335 for further credit.

*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. (Lecture/Seminar) Prerequisites: one of FPA 136, 137 or 237. 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. This course provides an opportunity for students to prepare scripts for fourth year film or video projects. (Lecture/Seminar) Prerequisites: one of FPA 238 or 353 or 456 and prior approval.

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. (Seminar/Studio) Prerequisites: FPA 131 or 151 and permission of the department. 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. Directing and Acting for Film and Video is not a duplicate of FPA 339 Selected Topics in Film, available in Summer 1990 and earlier.
FPA 390-3 Video Production II
Advanced examination of the conceptual and technological systems which support contemporary work in video, digital art and integrated media. Students will be responsible for the production of original works and are encouraged to collaborate with students in dance, music, theatre and visual art. Prerequisite: FPA 290 and prior approval. Pre- or co-requisite: FPA 393. Students who have received credit for FPA 437, or for 490 in 93-1 or earlier, may not take FPA 390 for further credit. A laboratory fee is required. Students should be advised that video production may require personal funding beyond the lab fee.

FPA 393-2 Techniques of Video
This is an intermediate course that examines the complex technical basis of the video medium. Emphasis is placed on the use of studio equipment, particularly video signal processing procedures. This course is a corequisite for FPA 390 and a prerequisite for all directed studies work in video. (Lecture/Lab) Prerequisites: FPA 290 and prior approval.

FPA 430-5 Filmmaking IV
The first half of a two-semester project in advanced 16 mm. film production. Students are expected to participate in the realization of one or more films or video productions during the two semesters. 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 registration. The exact nature of each student's participation will be determined in consultation with the instructor. (Production) Prerequisites: FPA 231 and 335 and prior approval. A laboratory fee is required. Students should be advised that film production may require personal funding beyond the lab fees.

FPA 431-5 Group Project in Film
Students will undertake projects sponsored by non-profit arts or social groups, in order to gain experience working in a semi-professional atmosphere. An experienced producer from the regular faculty or the local film community will supervise the work. (Production) Prerequisites: FPA 231 and prior approval. Group Project in Film is not a duplicate of FPA 431 Experimental Film Production, available in Fall 1989 or earlier.

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. (Laboratory). Prerequisite: FPA 430. A laboratory fee is required. Students should be advised that film production may require personal funding beyond the lab fee.

FPA 434-3 Selected Topics in Film and Video Production II
This course will cover a specific topic within the field of film and video production not covered in depth in regularly scheduled courses, such as The Apparatus of Cinema, Optical Printing Techniques, Film and/or Video Editing, Film Sound; Video Special Effects, Documentary Film and Video Production. (Seminar/Studio) Prerequisites: FPA 230 and prior approval. This course is not a duplicate of FPA 334-3 Film Analysis, offered prior to 1990-3.

*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. The course may be repeated for credit if a new topic is taught. (Seminar) Prerequisites: FPA 335.

FPA 437-3 Directed Study in Film Studies I
An independent course of study in film studies, to be pursued by the student in close consultation with the instructor. Before registration, the student must submit a written proposal outlining the project in detail to the chosen supervisor for approval. (Directed Study) Prerequisites: 60 credit hours including FPA 335, and prior approval. Directed Study in Film Studies I is not a duplicate of FPA 437 Advanced Video and Electronic Cinema, offered in 1989/90 and previous years.

FPA 438-3 Directed Study in Film Studies II
An independent course of study in film studies, to be pursued by the student in close consultation with the instructor. Before registration, the student must submit a written proposal outlining the project in detail to the chosen supervisor for approval. (Directed Study) Prerequisites: 60 credit hours including FPA 335, and prior approval.
FPA 439-3 Directed Study in Film and Video
An independent course of study in film or video will be pursued by the student in close consultation with the instructor. This may involve an independent project, collaboration with students in another class, a research topic, or a professional internship. Before registration, the student must submit a written proposal outlining the project in detail to the chosen supervisor for approval. The course may be repeated once for credit; however, only one offering may be applied toward fulfilment of the Film major requirements. (Seminar/Laboratory) Prerequisites: 6 credit hours in upper level Film and prior approval.

Music

*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. (Seminar/Studio)

*FPA 140-3 Music in the 20th Century
An introductory survey of major historical trends and practices of music in the twentieth century as revealed by the study of selected music examples. Critical issues fundamental to an understanding of contemporary composition will be examined (eg. impressionism, twelve-tone music, indeterminacy, the role of technology, improvisation). (Lecture) Prerequisite: FPA 104.

*FPA 141-3 Introduction to Music Performance
This course will continue the development of musical skills introduced in FPA 104, with an emphasis on the issues of contemporary music composition and performance. (Seminar/Studio) Prerequisite: FPA 104.

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 (eg. 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. (Lecture/Studio) 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. (Lecture/laboratory) Prerequisite: prior approval through interview. Contact department.

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. (Studio) Prerequisite: audition/interview, or FPA 141.

FPA 242-3 Western Music in the 17th Through 19th Centuries
An introduction to the history of European music in the period from approximately 1600 to 1900 including musical styles, genres and institutions. Many aspects of western music in the twentieth century (eg. public concerts, the symphony orchestra, opera, modern instruments and their literature, etc.) originate in this period as does a large part of twentieth century concert repertoire. These and other topics will be discussed in conjunction with selected music by composers such as Monteverdi, Purcell, Bach, Mozart, Schubert and Verdi. Lectures will sue recordings, slides and videos. No previous music experience is necessary. (Lecture) Students who have completed FPA 143 may not take this course for further credit.

*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. (Seminar/Studio) Prerequisite: prior approval.
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. (Lecture/Seminar) Prerequisites: 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. (Studio) Prerequisites: FPA 145 and prior approval.

FPA 246-3 Music Composition II
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. This course is a continuation of FPA 245-3. (Seminar/Studio) Prerequisites: FPA 245.

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 multitrack studio, signal processing, communication protocols such as MIDI and sampling techniques. (Lecture/Laboratory) Prerequisites: FPA 147.

*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 (studio), theoretical or a combination of the two, depending on the particular topic in a given semester. Prerequisite: FPA 140 and/or prior approval.

FPA 340-3 Contemporary Music Performance II
A continuation of FPA 240. (Studio) 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 semester. (Lecture) Prerequisite: 45 credit hours.

FPA 343-3 Gamelan II
Continuation of FPA 243, with increased emphasis on the theoretical and ethnomusicological aspects of gamelan. (Seminar/Studio) 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. (Lecture) Prerequisite: FPA 244.

FPA 345-3 Music Composition III
Composition for various 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. This course is a continuation of FPA 246. (Studio) Prerequisites: FPA 246 or 247, and prior approval.

FPA 346-3 Music Composition IV
Composition for various 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. This course is a continuation of FPA 345. (Seminar/Studio) Prerequisites: 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. (Seminar/Studio) Prerequisites: FPA 245 and 247. Students with credit for FPA 347 under its former title may take this course for further credit.

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 semester. (Studio) Prerequisite: FPA 245 and/or prior approval.

FPA 443-3 Gamelan III
Continuation of FPA 343 with emphasis on the technique of the elaborating instruments of the gamelan ensemble. (Seminar/Studio) Prerequisite: FPA 343.

FPA 445-3 Composition V
Composition for various 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 compositions will be discussed. Seminar topics will include orchestration, world repertoire, and issues of music technology. This course is a continuation of FPA 346. (Seminar/Tutorial) Prerequisites: FPA 346.

FPA 446-3 Music Composition VI
Composition for various 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. This course is a continuation of FPA 445. (Seminar/Tutorial) Prerequisites: 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. (Tutorial/Studio) Prerequisites: FPA 347. CMPT 001 or 110 is strongly recommended.

FPA 448-3 Directed Study in Music I
An independent program of study for students completing the music concentration. Suggested possibilities are composition, performance or theory and criticism. Prerequisites: appropriate 300 level courses and prior approval.

FPA 449-3 Directed Study in Music II
An independent program of study for students completing the music concentration. Suggested possibilities are composition, performance or theory and criticism. Prerequisite: appropriate 300 division courses and prior approval.
Theatre

*FPA 150-3 Basics of Theatre
An introduction to theatre. The course will examine the theory and practice of the theatre from its genesis in ritual to present day trends. (Lecture) Students with credit for GS 140 may not take FPA 150 for further credit.

*FPA 151-3 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 expressiveness - searching through and expanding individual powers of expression vocally, physically, intellectually, imaginatively, and emotionally. (Studio)

*FPA 152-3 Introduction to Acting II
This course introduces the process of working with a text, as well as elementary techniques of physical and vocal expression. (Studio) Prerequisite: FPA 151.

FPA 250-3 Acting I
A course which 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: through work with other actors in ensemble relationships, through work on text as a blueprint for expression, and through scene study as a vehicle for the realization of the specific dramatic content and overall shape of a play. (Studio) Prior to registration 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 FPA 250. (Studio) Prerequisites: FPA 250 and 254. Corequisite: FPA 255.

*FPA 252-3 Playmaking I
Introduces the concepts of elements of playmaking. The nature of this course will change according to the perceived needs of the group. The work will consist of in-depth exploration of playmaking processes such as self scripting, mask exploration, clown work, political theatre, or any activity which falls under the general heading of playmaking. The ultimate objective is to enable students to make their own theatre pieces. (Studio) Prerequisite: prior approval. Theatre major students must take FPA 252 concurrently with either FPA 250 and 254, or 251 and 255.

FPA 253-3 Playmaking II
Continues the development of the playmaking research work undertaken in FPA 252-3. (Studio) Prerequisite: prior approval. Theatre major students must take FPA 253 concurrently with either FPA 250 and 254, or 251 and 255.

FPA 254-3 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 movement, voice training, play reading and production work. The play reading seminar will focus on Greek Drama. (Seminar/Laboratory) Prerequisites: prior approval. Corequisite: FPA 250.

FPA 255-3 Theatre Laboratory II
This is the second of four courses in performance research. The work comprises movement, voice training, play reading and production work. The play reading seminar will concentrate on medieval and Elizabethan drama. (Seminar/Laboratory) Prerequisites: FPA 250 and 254. Corequisite: FPA 251.

*FPA 259-3 Selected Topics in Theatre I
A specific topic in theatre which is not otherwise covered in depth in regular courses. The work may be practical (studio), theoretical or a combination of the two, depending on the particular topic in a given semester. Prerequisite: FPA 150 and/or prior approval.

FPA 350-3 Acting III
Continues and expands upon the work undertaken in FPA 250 and 251. Work with established texts will receive increasing emphasis. Scene work may lead to a series of informal presentations. (Studio) Prerequisites: FPA 251 and 255 and prior approval. Corequisite: FPA 354.
FPA 351-3 Acting IV
Continues and expands upon the work of FPA 350. (Studio) Prerequisites: FPA 350 and 354. Corequisite: FPA 355.

FPA 352-3 Playmaking III
A course designed to continue the development of the playmaking research begun in FPA 252 and 253. Emphasis will be placed upon the creation of original materials with the possibility of presentation before an audience. (Studio) Prerequisites: FPA 251 and 255 and prior approval.

FPA 353-3 Playmaking IV
Continues the playmaking work of FPA 352. (Studio) Prerequisites: FPA 350 and 354 and prior approval.

FPA 354-3 Theatre Laboratory III
This is the third of four courses in performance research. The work comprises movement, voice training, play reading and production work. The play reading seminar will concentrate on drama after 1800. (Seminar/Laboratory) Prerequisites: FPA 251 and 255. Corequisite: FPA 350.

FPA 355-3 Theatre Laboratory IV
This is the fourth of four courses in performance research. The work comprises movement, voice training, play reading and production work. The play reading seminar will focus on an aspect of modern drama. (Seminar/Laboratory) Prerequisites: FPA 350 and 354. Corequisite: FPA 351.

FPA 358-2 Speech and Oral Interpretation I
This course provides an introduction to the elements of English speech and its use in the dramatic setting. Students will be introduced to basic practices leading to the creation of a theatrical standard of speech. Prerequisites: FPA 251 and 255.

FPA 359-3 Selected Topics in Theatre II
A specific topic in theatre which is not otherwise covered in depth in regular courses. The work may be practical (studio), theoretical or a combination of the two, depending on the particular topic in a given semester. Prerequisite: FPA 250 and/or prior approval.

FPA 450-3 Advanced Studio Skills I
This course will undertake advanced performance work with research into specific skills that will enrich the repertoire of technique acquired in the earlier studios. Course content may be adjusted according to needs and interests of specific students. This could include the theatrical techniques of Commedia Dell'arte, classical and contemporary acting styles, circus skills, advanced period movement, stage combat and contact improvisation. (Studio) Prerequisites: FPA 350, 351 and prior approval.

FPA 453-3 Theory and Practice of Directing
An introduction to the fundamentals of directing. Directorial topics such as composition, picturization, movement, rhythm, staging choices and play selection will be considered. There will be practical problems in directing styles. (Seminar) Prerequisites: FPA 253, 350.

FPA 454-2 Speech and Oral Interpretation II
Advanced work in the elements of spoken English with attention given to relationship between oral use of the language and elements of oratory and story telling. Elements of story and story telling will be considered through active interpretation of myths, fairy tales, biblical psalms, carnival pitches, patter songs, anecdotes and choral work from the classical Greek canon. (Studio) Prerequisite: FPA 358.

FPA 456-3 Conceptual Approaches to Drama
A conceptual approach to a selected body of dramatic work. This might entail an intensive study of a single author or the consideration of a major critical issue such as the question of naturalism in contemporary theatre or the nature of story structure in the three act play or narrative film. (Seminar/Studio) Prerequisites: 45 credit hours including at least six upper division FPA credit hours and prior approval.
FPA 458-3 Directed Studies in Theatre I
This course is intended for advanced theatre students who wish to undertake coherent project work in theatre under close supervision. (Directed Study) Prerequisites: FPA 351 and prior approval.

FPA 459-3 Directed Studies in Theatre II
This course is intended for advanced theatre students who wish to undertake coherent project work in theatre under close supervision. (Directed Study) Prerequisites: FPA 351 and prior approval.

Visual Art

*FPA 160-3 Introductory Studio in Visual Art I
Deals with problems of art-making in terms derived from recent and non-traditional directions in visual art. Work in a variety of media will be assigned, and some reading is required. (Studio) Prerequisite: approval, as a result of an interview, is required prior to registration. Contact department. A laboratory fee is required. Students with credit for FPA 160 under its former title may not take this course for further credit.

*FPA 161-3 Introductory Studio in Visual Art II
Permits interested students to continue work undertaken in FPA 160-3. Work in a variety of media will be assigned, and some reading is required. (Studio) Prerequisite: FPA 160. A laboratory fee is required.

*FPA 163-3 Issues in Spatial Presentation
An interdisciplinary studio course concentrating on ideas of spatial perception, modification and installation, as they generally apply to the arts. From conceptualization and drawn perspective plans, to methods of scaling, projection, and construction and manifestation in actual space. (Studio) Prerequisite: approval through interview, is required prior to registration. A laboratory fee is required.

FPA 164-2 Visual Art Techniques: Photography, Video
This course offers a fundamental introduction to the methods, materials and practice of photography and video. Each discipline is presented as a discrete unit of six weeks. The relation between the acquisition of skills and their functional application to problems in the production of art will be emphasized. (Lab) Prerequisites: This course is primarily intended for visual art majors and students in the extended minor. It must be taken concurrently with either FPA 160 or 161. Prior approval and a laboratory fee are required.

FPA 165-2 Visual Art Techniques: Painting, Sculpture
This course offers a fundamental introduction to the methods, materials and practice of painting and sculpture. Each discipline is presented as a discrete unit of six weeks. The relation between the acquisition of skills and their functional application to problems in the production of art will be emphasized. (Lab) Prerequisites: This course is primarily intended for visual art majors and students in the extended minor. It must be taken concurrently with either FPA 160 or 161. Prior approval and a laboratory fee are required.

*FPA 166-3 History of Art: Ancient to Renaissance
An introduction to the history of the visual arts from pre-historic time to the end of the Gothic era. A systematic chronological review of the major works in the Western tradition, placed in their social, institutional and stylistic context. Introduces concepts necessary for analysing general historical development in the arts and for analysing the meanings of individual works. (Lecture)

*FPA 167-3 History of Art: Renaissance to Modern
An introduction to the history of the visual arts from the beginnings of the Renaissance around 1400 to the end of the 19th century. A systematic chronological review of the major works in the Western tradition, placed in their social, institutional and stylistic context. Introduces concepts necessary for analysing general historical development in the arts and for analysing the meaning of individual works. (Lecture)

FPA 168-3 History of Art: 20th Century
This course covers Western art of the twentieth century with attention to the important artists, artworks, ideologies and debates of this period. Works of art will be considered in the context of their artistic and aesthetic programs, manifestoes, exhibitions and
institutions. Debates around modernism, postmodernity, feminism and the avant-garde will be systematically explored in relation to these factors. (Lecture)

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. (Studio) Prerequisites: FPA 161, 164, 165 and prior approval. A laboratory 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. (Studio) Prerequisite: FPA 260. A laboratory fee is required.

FPA 262-3 Drawing I
This studio course introduces basic drawing skills, media and techniques. Drawing is taught in the context of its functions in contemporary art. Basic skills, approaches and techniques are practised both to develop student's physical abilities and their capacities to use drawing as a creative and imaginative method in all artistic work. (Studio) Prerequisites: FPA 161 and prior approval.

FPA 263-3 Painting I
This course introduces students to painting as an art form, through the acquisition and application of skills and concepts relevant to the practice of the medium in a contemporary context. Students will work through problems and projects assigned by the instructor to develop their technical abilities in relation to subjects and content. (Studio) Prerequisites: FPA 165 and prior approval.

FPA 264-3 Sculpture I
This course introduces students to sculpture as an art form, through the acquisition and application of skills and concepts relevant to the practice of the medium in a contemporary context. Students will work through problems and projects assigned by the instructor to develop their technical abilities in relation to subjects and content. (Studio) Prerequisites: FPA 165 and prior approval.

FPA 265-3 Photography I
This course introduces students to the technical and material problems of photography as an art form and its relation to current art discourses and issues. Students will work through projects assigned by the instructor to develop their technical abilities in relation to subjects and content. (Studio) Prerequisites: FPA 164 and prior approval.

*FPA 269-3 Selected Topics in Visual Art I
A specific topic in visual art which is not otherwise covered in depth in regular courses. The work may be practical (studio), theoretical or a combination of the two, depending on the particular topic in a given semester. Prerequisite: FPA 160 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 semester. 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. (Studio) Prerequisites: FPA 261 and prior approval. 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 semester. 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. (Studio) Prerequisites: FPA 360 and 366. Corequisite: FPA 367.

FPA 362-3 Drawing II
A studio course in advanced drawing skills, media and techniques. Drawing is taught in the context of its functions in contemporary art. Advanced skills, approaches and techniques are practised both to develop student's physical abilities and their
capacities to use drawing as a creative and imaginative method in all artistic work. (Studio) Prerequisite: FPA 262 and prior approval.

FPA 363-3 Painting II
This is an advanced course in contemporary problems of painting emphasizing the acquisition and application of skills and concepts relevant to the practice of the medium in a contemporary context. Students will work through problems and projects assigned by the instructor to develop their technical abilities in relation to subjects and content. (Studio) Prerequisites: FPA 263 and prior approval.

FPA 364-3 Sculpture II
This is an advanced studio course in the development of sculpture as an art form, through the acquisition and application of skills and concepts relevant to the practice of the medium in a contemporary context. Students will work through problems and projects assigned by the instructor to develop their technical abilities in relation to subjects and content. (Studio) Prerequisites: FPA 264 and prior approval.

FPA 365-3 Photography II
This is an advanced studio course in the technical and material problems of photography as an art form and its relation to current art discourses and issues. Students will work through projects assigned by the instructor to develop their technical abilities in relation to subjects and content. (Studio) Prerequisites: FPA 265-3 and prior approval.

FPA 366-3 Seminar in Visual Art I
This is 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. (Seminar) Prerequisite: FPA 211 Corequisite: FPA 360 and prior approval.

FPA 367-3 Seminar in Visual Art II
This is a semester course to be taken by all students in FPA 361-3. 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. (Seminar) Prerequisite: FPA 366. Corequisite: FPA 361 and prior approval.

FPA 369-3 Selected Topics in Visual Art II
A specific topic in visual art which is not otherwise covered in depth in regular courses. The work may be practical (studio), theoretical or a combination of the two, depending on the particular topic in a given semester. Prerequisite: FPA 260 and/or prior approval.

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 semester and develop it in critical dialogue with the instructor(s). (Studio) Prerequisites: FPA 361 and 367 and prior approval.

FPA 461-3 Studio in Visual Art VI
This course permits students completing the Visual Art major to work in an open and critical studio situation. The studio work is accompanied by a seminar component in which the student's work is related to theoretical issues in contemporary art-making. Students will be required to present a research paper developed in connection with their own art practice. (Studio/Seminar) Prerequisites: FPA 460, and entry to Visual Art major program.

FPA 469-3 Directed Project in Visual Art
An independent guided studio course in visual art. Students will be expected to complete a body of planned and approved work. (Independent Studio) Prerequisites: FPA 460 and prior approval by application.
School of Criminology
Location: 2630 Diamond Building
Telephone: 778.782.3213
Director: N.T. Boyd BA (W Ont), LLB, LLM (York)

Professors
N.T. Boyd BA (W Ont), LLB, LLM (York), Director of School
P.J. Brantingham AB, JD (Col), DipCriminol (Camb)
P.L. Brantingham AB (Col), MA (Fordham), MSP, PhD (Florida State)
R.R. Corrado BA (Mich), MA, PhD (Northwestern)
J.W. Ekstedt BSc (Seattle Pacific), BDiv (C'dia Sem), MA (Chic), MDiv (C'dia Sem), PhD (Calif)
E.A. Fattah LLL (Cairo), MA, PhD (Montr), FRSC
C.T. Griffiths BA, MA, PhD (Montana)
J. Lowman BA (Sheff), MA (York), PhD (Br Col)
R.J. Menzies BA (York), MA, PhD (Tor)
S.N. Verdun-Jones BA, MA (Camb), LLM, JSD (Yale)

Associate Professors
E.O. Boyanowsky BA (WOnt), MS, PhD (Wis)
J. Brockman BA (Sask), MA (Alta), LLB (Calg), LLM (Br Col)
B. Burtch BA (Qu), MA (Tor), PhD (Br Col)
D.E. Chunn BA (Br Col), MA, PhD (Tor)
D.F. Cousineau BA, MA, PhD (Alta)
K. Faith BA, PhD (Calif)
W.G. Glackman BA (Calif), MA, PhD (S Fraser)
R.M. Gordon BA (La T), MA (S Fraser), PhD (Br Col)
M.A. Jackson BA (Calif), MA, PhD (Tor)
J.A. Osborne LLB (Edin), MA (Tor), LLM (Br Col), Associate Vice-President, Academic
T.S. Palys BA, MA (Manit), PhD (Car)

Assistant Professors
D. Lacombe BA (Sherbrooke), MA, PhD (Tor)*

Adjunct Professors
D. Campbell BA (Calg), LLB (Alta)
D. Chappell BA, LLB (Tasmania), PhD (Camb)
D. Eaves MB, ChB (Liverpool), DPM, MRC Psych (Royal Collge of Physicians)
M. Hesser BA (Denver), MA (Syracuse), PhD (Br Col)
A. Oosthoek BA (York), MA (Car)
T. Tobin LLB (Calg)

Lecturer
C. Singer BSc, MA, PhD (Tor)

Associate Members
J.R.P. Ogloff Psychology
C.D. Webster Psychology

*joint appointment with Sociology and Anthropology

Advisors
Ms. T. Nathanson, 2644 Diamond Building, 778.782.3645
Ms. D. Palliser, 2640 Diamond Building, 778.782.3527

Criminology offers courses leading to a Bachelor of Arts degree to students interested in a comprehensive, interdisciplinary approach to Criminology.
The study of Criminology attempts the unification of all aspects of crime by an interdisciplinary and integrative approach. The curriculum is designed to assist students to acquire an in-depth understanding of the complexities of criminal, delinquent, and deviant behavior and of society reaction to crime and deviance. Students concurrently acquire a theoretical and practical knowledge of the criminal justice system and its components, and gain insights into the philosophy, sociology, and present state of criminal law.

**Undergraduate courses**
Course descriptions for all Criminology undergraduate courses.

**Criminology Disciplines**
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

The interdisciplinary character of the 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.

**Enrollment Limitations**

**Admission**
The school limits admission to the upper division of its major, minor and honors programs. Entry into the major/honors or minor in the School of Criminology will be on the basis of a formal application made to the school during the Fall or Spring semester. Students are eligible to apply for entry to the major/honors program after successful completion of 60 semester hours, including the lower division group A and group B required courses. Students are eligible to apply for entry to the minor program after successful completion of 60 semester hours and CRIM 101 and 131. Students should make application to the school during the semester in which they are completing the above requirements. If completion is to take place during a Summer semester, students should make application during the Spring, and will be admitted for the Fall semester conditional upon successful completion of the requirements in Summer.

With the approval of the Office of the Dean of Arts, the School of Criminology will establish a yearly quota - the number of students to be admitted into the major/honors or minor. This quota will be established on the basis of projected available course space and school resources. In advance of each competition, the school will announce the minimum cumulative grade point average below which students will not be considered for admission. The school will receive and review all applications from those eligible for consideration, and in its screening decisions will consider all relevant materials, including cumulative grade point, practical experience, letters of recommendation and other material the student wishes to submit in support of the application.
Continuation in Major, Honors or Minor
To continue as a Criminology major, honors or minor, students must maintain a CGPA of 2.25. Students whose CGPA falls below 2.25 will not be allowed to register in any upper division Criminology courses including those offered through Distance Education. When it is restored to 2.25, students will be readmitted after review and approval of the School of Criminology.

Appeal Procedure
Applicants denied admission to a Criminology major/honors/minor may appeal in writing to the Director of the School. If that appeal results in a negative decision, a written appeal to the Dean of the Faculty of Arts may be submitted. Appeals will be granted only in very exceptional circumstances.

Registration Priority
Registration priority for limited enrollment upper division seminar courses in the school will be established on the basis of cumulative grade point average.

Course Drop Policy
Those who drop or withdraw after week one from an upper division Criminology course that has been closed due to high enrollment will lose priority for admission to that course for one semester. In extenuating circumstances the school may waive this regulation following the student's written appeal.

A student who drops a Criminology course which does not fall under the above category, after the normal course change period, will not be permitted to preregister for that course in the following semester, but may be admitted to that course during the course change period if space exists.

CRIM 320 and 330, the two required courses at the upper division, as well as CRIM 369, which students must complete to qualify for consideration for a field placement, will be exempt from the above drop policy.

Transfer Students
Students transferring to Simon Fraser University from a two-year college that has articulated the first 60 semester hours of study in Criminology with the School of Criminology will be considered on the basis of their college cumulative grade point average (recalculated on the basis of grades received in courses transferable to the University), as well as other relevant materials.

Major Program
Students in the general degree program must complete a total of 120 semester hours (see requirements following and General Information).

Students majoring in Criminology must obtain a minimum grade of C- in all required group A and group B courses.

Lower Division (normally the first 60 credit hours)
During the first four levels, students are required to complete 20 courses (60 semester hours) including at least the following.

- eight courses from group A
- seven courses from group B
- an additional five courses of general electives

The Faculty of Arts breadth requirements must be completed for graduation and the general electives should be considered for that purpose.

Students may not complete the group B requirements with courses other than those listed below unless they obtain permission to do so from the school’s undergraduate curriculum committee prior to taking the courses.

Group A - Lower Division Requirements
Students are required to complete eight courses, including the following.
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 120-3 Research Methods in 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

plus one of
CRIM 151-3 Introduction to Policing
CRIM 203-3 Historical Reaction to Crime and Deviance
CRIM 210-3 Law, Youth and Young Offenders
CRIM 213-3 The Female Offender
CRIM 231-3 Introduction to the Judicial Process
CRIM 241-3 Introduction to Corrections

Group B - Lower Division Requirements
Students are required to complete seven courses, including all of

SA 150-4 Introduction to Sociology
POL 151-3 The Administration of Justice
PSYC 100-3 Introduction to Psychology I
PSYC 102-3 Introduction to Psychology II

plus one of
PSYC 210-3 Data Analysis in Psychology
* STAT 101-3 Introduction to Statistics, Option A
* STAT 103-3 Introduction to Statistics for Social Sciences

*of the two Statistics courses, STAT 103 is recommended for students in Criminology.

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 Facts and Values

plus one of
CNS 160-3 The Social Background of Canada
CMNS 110-3 Introduction to Communication Studies
CMNS 130-3 Explorations in Mass Communication
CMNS 210-3 History of Communication
CMNS 230-3 Introduction to Communication Media
CMNS 253-3 Introduction to Information Technology: The New Media
CMPT 001-3 Computers and the Activity of People
CMPT 103-3 Introduction to Pascal Programming
CMPT 104-2 Introduction to Modula 2 as a Second High Level Programming Language
CMPT 105-3 Fundamental Concepts of Computing
CMPT 201-4 Data and Program Organization
ECON 100-3 Introduction to Economics
ECON 101-3 The Canadian Economy
ENGL 199-3 University Writing
HIST 101-3 Canada to Confederation
HIST 102-3 Canada since Confederation
HIST 201-3 The History of Western Canada
HIST 202-3 BC and Confederation: Studies in Historical Method
PHIL 210-4 Natural Deductive Logic
PHIL 220-3 The State and the Citizen
PHIL 244-3 Introduction to Philosophy of Natural and Social Science
POL 100-3 Introduction to Politics and Government
POL 210-3 Political Theory
POL 221-3 Introduction to Canadian Government
POL 222-3 Introduction to Canadian Politics
POL 251-3 Introduction to Canadian Public Administration
PSYC 106-3 Social Issues
PSYC 180-3 Brain and Behavior
PSYC 221-3 Introduction to Cognitive Psychology
PSYC 241-3 Introduction to Abnormal Psychology
PSYC 250-3 Child Psychology
PSYC 260-3 Social Psychology
PSYC 270-3 Introduction to Personality
SA 202-4 Post-Industrial Society
SA 203-4 Comparative Ethnic Relations
SA 250-4 Introduction to Sociological Theory
SA 260-4 Individual and Society

General Electives - Lower Division Requirements
Students are required to complete an additional 5 courses of general electives which can be chosen from group A, group B, or any other 100/200 level courses or the transfer equivalent thereof. Students are advised to refer to the Faculty of Arts breadth requirements when selecting general electives.

Note: Students who have declared a Criminology major will 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
Among the remaining semester hours required for the degree, students must complete a minimum of 48 semester hours in courses numbered 300 and above, of which at least 36 semester hours must be in upper division courses in Criminology chosen from group A below. The remaining 12 semester hours may be taken from group A and/or from group B below. For any given semester, the School of Criminology may add relevant courses to those listed in group B. Students may not complete their group B electives with courses other than those on the approved group B list unless they obtain permission to do so from the school's Undergraduate Curriculum Committee prior to taking the courses.

Group A - Upper Division Requirements
Students are required to complete a minimum of 36 semester hours including the following two courses.

CRIM 320-3 Advanced Research Issues in Criminology
CRIM 330-3 Criminal Procedure and Evidence

plus a minimum of 30 semester hours from upper division courses in Criminology (excluding CRIM 301). See Criminology in the Undergraduate Courses within this Calendar for the listing of upper division Criminology courses.

Group B - Upper Division Requirements
Students must complete an additional 12 semester hours which may be chosen from the following courses in group B and/or from upper division courses in Criminology (excluding CRIM 301).

ARCH 442-5 Forensic Anthropology
BUEC 391-3 Law in the Economic Society
BUEC 495-3 Legal Aspects of Economic Relationships
BUS 303-3 Business in Society
BUS 374-3 Organization Theory
BUS 393-3 Commercial Law
BUS 481-3 Human Resource Planning and Staffing Decisions
BUS 482-3 Reward Systems and Employee Development  
CMPT 320-3 Social Implications of a Computerized Society  
CMPT 370-3 Information System Design  
CMPT 371-3 Data Communications and Networking  
HIST 312-3 Poverty, Crime and Madness: Society and the Outcast  
HIST 326-3 The History of Native People in Canada  
PHIL 300-3 Introduction to Philosophy  
PHIL 310-3 Modal Logic and its Applications  
PHIL 320-3 Social and Political Philosophy  
PHIL 321-3 Moral Issues and Theories  
PHIL 341-3 Philosophy of Science  
POL 313-3 Political Ideologies  
POL 321-3 The Canadian Federal System  
POL 323-3 Provincial Government and Politics  
POL 324-3 The Canadian Constitution  
POL 344-3 Public International Law  
POL 352-3 Canadian Local and Urban Government and Politics  
POL 353-3 Public Administration (Public Sector Management)  
POL 355-3 Governing Instruments  
POL 357-3 Public Law  
POL 411-3 Normative Political Theory  
POL 423-3 BC Government and Politics  
POL 426-3 Canadian Political Behavior  
POL 427-3 The Legislative Process in Canada  
POL 428-3 Selected Topics in Canadian Government and Politics I  
POL 429-3 Selected Topics in Canadian Government and Politics II  
POL 435-3 Comparative Federal Systems  
POL 451-3 Public Policy Analysis  
POL 454-3 Urban Public Policy Making  
POL 455-3 Policy Evaluation  
POL 459-3 Selected Topics in Public Policy, Public Law and Public Administration  
PSYC 302-3 Learning  
PSYC 304-3 Motivation  
PSYC 306-3 Psychological Assessment Procedures  
PSYC 355-3 Psychology of Adolescence and Youth  
PSYC 357-3 Psychology of Adulthood and Aging  
PSYC 369-3 Law and Psychology  
PSYC 370-3 Theories of Personality  
PSYC 373-3 Behavior Therapies  
PSYC 375-3 Fundamentals of Clinical Psychology  
PSYC 383-3 Drugs and Behavior  
PSYC 470-5 Personality  
SA 300-4 Canadian Social Structure  
SA 303-4 Ethnic Conflicts  
SA 304-4 Social Control  
SA 321-4 Social Movements  
SA 327-4 Sociology of Knowledge  
SA 351-4 Classical Marxist Thought  
SA 355-4 Quantitative Methods  
SA 358-4 The Philosophy of the Social Sciences  
SA 362-4 Society and the Changing Global Division of Labor  
SA 364-4 Urban Communities and Cultures  
SA 386-4 Native Peoples and Public Policy  
SA 387-4 Canadian Native Peoples  
SA 400-4 Canadian Ethnic Minorities  
STAT 302-3 Analysis of Experimental and Observational Data  
STAT 410-3 Statistical Analysis of Sample Surveys  
STAT 430-3 Statistical Design and Analysis of Experiments  
WS 303-3 Special Topics in Women's Studies (when offered as Women and the Law)
Additional Electives
The remaining semester hours to satisfy degree requirements may be selected at the discretion of the student. Students are reminded that the Faculty of Arts breadth requirements must be completed for graduation and the general electives should be considered for that purpose.

Joint Major in Psychology and Criminology
Please refer to the Department of Psychology section for requirements.

Honors Program
Students who wish to undertake honors work in Criminology should apply to the School Director.

Students in the honors program must complete a minimum of 132 semester hours. See General Information section.

Lower Division
The lower division requirements are the same as for the major in Criminology.

Upper Division
The program includes a minimum of 72 semester hours, of which at least 60 must be from courses numbered 300 and above. Of these semester hours, 50 must be selected from Criminology courses.

Students will be required to take CRIM 490 and 499.

Honors students will be required to maintain an overall cumulative grade point average of not less than 3.0.

Minor Program
Students who minor in Criminology must complete CRIM 101, 131 and at least 18 other semester hours in Criminology courses numbered 300 and above. A minimum grade of C- in CRIM 101 and CRIM 131 is also required.

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.

Post Baccalaureate Diploma
Advisor: Ms. T. Nathanson, 2644 Diamond Building, 778.782.3645

This program is available for students who have already completed a Bachelors degree to expand their knowledge of criminology through a recognized program. This diploma allows students to pursue individual interests in specific areas of criminology and is available through distance education courses, on-campus and Simon Fraser University at Harbour Centre.

For information about post baccalaureate diploma program general regulations, refer to Continuing Studies.

Program Requirements

- completion of lower level prerequisite courses CRIM 101, 131 and 135
- successful completion of an approved program comprised of 30 semester hours of third and fourth year courses
- Of the 30 semester hours, a minimum of 15 must come from Criminology courses numbered 300/400 and the remaining credits from any upper division on-campus or distance education courses, or a combination of both
- minimum grade point average of 2.5 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 admission to the program must be received by the advisor no later than

- February 1 (Summer semester admission)
- May 1 (Fall semester admission)
- October 1 (Spring semester admission)

Students must make separate application for admission to the University, in accordance with University deadlines for the appropriate semester.

Applications received by the School of Criminology after the deadline will be considered only if resources permit following consideration of those applications received on time.

Certificate Programs
Advisor: Ms. T. Nathanson, 2644 Diamond Building, 778.782.3645

The University offers two Criminology Certificate Programs: the General Certificate in Criminology and the Advanced Certificate in Criminology. Both certificates are primarily directed toward undergraduates and criminal justice professionals, but are open to all. Those who hold a Bachelors 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 foundation in criminology, and the Advanced Certificate program provides an in-depth understanding of criminology through more intensive study.

Courses in these certificate programs are offered through the Centre for Distance Education and assist students in understanding of the complexities of illegal behaviors, as well as society's reactions to these behaviors.

Admission Requirements
Students applying for admission must meet undergraduate admission deadlines, as set out in this Calendar. Application forms, accompanied by official documents, must be submitted to the Office of the Registrar. In addition to applying for University admission, all new students must apply in writing to the School of Criminology for admission to the certificate programs. Letters should be submitted to the advisor.

General Certificate

Program Requirements
- successful completion of 60 credit hours, including 13 courses set out below
- a minimum grade of C- in the seven required Criminology courses
- at least five of the 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 in Criminology
CRIM 103-3 Psychological Explanations of Criminal and Deviant Behavior
CRIM 104-3 Sociological Explanations of Criminal and Deviant Behavior
CRIM 120-3 Research Methods in 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
PHIL 110-3 Introduction to Philosophical Concepts 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, Option A

The remaining credit hours 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
- in addition to these four courses, at least 16 semester hours must be chosen from groups A, B or C

Optional Courses

Group A
CRIM 151-3 Introduction to Policing
CRIM 241-3 Introduction to Corrections

Group B
CMNS 130-3 Explorations in Mass Communication
ENGL 199-3 University Writing
HIST 102-3 Canada Since Confederation
SA 250-4 Introduction to Sociological Theory

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 level Simon Fraser University courses.

**Note:** Students enrolled at Simon Fraser University must obtain prior permission of the Office of the Registrar by completing the letter of permission form.

**Advanced Certificate**

**Program Requirements**

- completion of Simon Fraser University's General Certificate in Criminology, or two years (equivalent to 60 Simon Fraser University semester hours) of accredited course work at a university or community college, or completion of a certificate or diploma program in criminology from a BC regional college prior to entering the Advanced Certificate Program

**Note:** Students who have not previously completed a Criminology certificate or diploma are required to take CRIM 101, 131 and 135, and obtain a minimum grade of C- in each.

- successful completion of 18 semester hours from Criminology courses numbered 300/400 (Please refer to the group A Criminology courses in the Criminology Major Program section.)
- The majority of courses must be completed through the distance education program. (Consult the Centre for Distance Education, for a listing of Criminology courses currently available through Distance Education.)
- completion of the certificate within five years of admission to the program.

**Co-operative Education Program**

This program is offered to qualified students who wish to acquire practical experience in criminology. The program entails planned semesters of study and employment in the area of the student's choice.

To be eligible for admission to the Co-operative Education Program, students must have completed 30 semester hours, including

*all of*

CRIM 101-3 Introduction to Criminology
CRIM 120-3 Research Methods in 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

plus one of
PSYC 210-3 Data Analysis in Psychology
STAT 101-3 Introduction to Statistics, Option A
STAT 103-3 Introduction to Statistics for Social Sciences

and have a CGPA of not less than 2.75. Transfer students must have completed at least 15 semester hours at Simon Fraser University.

For further details, refer to the Co-operative Education section. Arrangements for work semesters are made through the Faculty of Arts Co-op Co-ordinator, who should be consulted at least one semester in advance.

Criminology Undergraduate Courses

Faculty of Arts

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. (Lecture/Tutorial)

Note: CRIM 101 is a prerequisite for all upper division Criminology courses unless waived with the special permission of the school.

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. (Lecture/Tutorial) Prerequisites: PSYC 100 and 102 are recommended.

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. (Lecture/Tutorial) Recommended: SA 150.

CRIM 120-3 Research Methods in Criminology
An introduction to criminological research and 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. (Lecture/Tutorial) Recommended: CRIM 101 is strongly recommended.

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. (Lecture/Tutorial)
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. (Lecture/Tutorial)

CRIM 151-3 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. (Lecture/Tutorial)

CRIM 161-0 Practicum I
First semester of work experience in the Criminology Co-operative Education program. (Practicum) Prerequisites: thirty semester hours (at least fifteen completed at Simon Fraser University) including CRIM 101, 120, 131, 135 and one of PSYC 210, STAT 101 or 103, with a cumulative grade point average of not less than 2.75. Students should apply to the Faculty of Arts Co-op Coordinator one semester 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. (Lecture/Tutorial)

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. (Lecture/Tutorial) Prerequisites: CRIM 103 and 104.

CRIM 213-3 The Female Offender
This course offers an historical and analytical overview of the female offender, 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. (Lecture/Tutorial) Recommended: CRIM 103 and 104.

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. (Lecture/Tutorial) Prerequisite: CRIM 135.

CRIM 231-3 Introduction to the Judicial Process
A critical examination and evaluation of the judicial process. An introduction to the criminal courts and the legal profession. The structure and functions of the criminal court system and its relationship to other branches of government. The role of the criminal court judge, prosecutor, lawyer, jury, witness, expert, etc. Appointment, tenure, removal of judges; the social psychology of the courts; the jury system; plea bargaining; judicial behavior of the courts; the courts and the community; public opinion, attitudes and images of the courts; the mass media and the courts. (Lecture/Tutorial) Prerequisite: CRIM 131. CRIM 135 is recommended.

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. (Lecture/Tutorial) Prerequisite: CRIM 101 or 131.

CRIM 261-0 Practicum II
Second semester of work experience in the Criminology Co-operative Education program. (Practicum) Prerequisites: successful completion of CRIM 161 and 45 credit hours with a minimum CGPA of 2.75.

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. (Lecture/Tutorial) This course may not be taken by students who are majoring or minoring in Criminology.

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. (Seminar) Prerequisites: CRIM 101, 104.

CRIM 310-3 Young Offenders and Criminal Justice: Advanced Topics
This course will examine, on a semester basis, some of the more complex contemporary issues relating to young offenders and justice. For any given semester, 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 Delegalization in Canada and the United States. Prerequisites: CRIM 101 and 210.

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. (Seminar) 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. (Seminar) Prerequisites: CRIM 101 and 104.

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, mortality crime, etc. (Seminar) Prerequisite: CRIM 101.

CRIM 314-3 Psychiatry and the Judicial Process
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. (Lecture/Tutorial) Prerequisite: CRIM 101 required; CRIM 131 recommended.
CRIM 320-3 Advanced Research Issues in Criminology
A detailed examination of quantitative and qualitative research methods and techniques most frequently used in criminological research. Advantages and shortcomings of each method and the appropriateness of each technique for the specific types of criminological research. Problems of pure and applied research. Ethics of criminological research. Specific issues of interdisciplinary research. Critical evaluation of the methods utilized in certain major criminological studies. (Lecture/Tutorial) Prerequisites: CRIM 101 and 120.

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. (Lecture/Tutorial) Prerequisites: 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 semester 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. (Seminar) Prerequisites: CRIM 101 and CRIM 230.

CRIM 332-3 Sociology of Law

CRIM 333-3 Women, Law and the State
This course will provide 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 analysed. 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. (Seminar) Prerequisites: CRIM 101 and 135. CRIM 213 recommended.

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. (Lecture/Seminar) Prerequisites: CRIM 101 and 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. Prerequisites: CRIM 101 and 135. Recommended: CNS 280 or ECON 101.

CRIM 338-3 Philosophy of Law

CRIM 342-3 Dynamics of Interpersonal Relationships
Study of crime in an interactionist perspective. Critical analysis of criminogenic situations resulting from primary group and non-primary group relationships. Study of the dynamics of interpersonal relationships leading to the commission of violent crimes.
Dynamics of helper-client relationship in correctional settings: probationer-probation officer, parole officer-parolee, etc. Dynamics of interpersonal and intergroup relationships in correctional institutions. Group dynamics. Relationships within the adolescent gang. (Lecture/Seminar) Prerequisite: CRIM 101 required. PSYC 100, 102 and CMNS 220 are recommended.

CRIM 343-3 Correctional Practice I
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. (Seminar) Prerequisite: CRIM 101. CRIM 241 is strongly recommended. Students with credit for CRIM 340-3 may not take CRIM 343-3 for further credit.

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. (Lecture/Seminar) Prerequisites: CRIM 101, 104.

CRIM 361-0 Practicum III
Third semester of work experience in the Criminology Co-operative Education program (Practicum) Prerequisites: successful completion of CRIM 261 and 60 credit hours 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 his duty to his 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. (Lecture/Laboratory) 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. Prerequisites: CRIM 320 and 330, and written application to the School no later than the last day of classes of the preceding semester, CRIM 370 and 470 may not be taken concurrently.

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. (Seminar) Prerequisites: CRIM 131 and 320.

CRIM 411-3 Crime and Victimization of the Elderly
The elderly in conflict with the law: analysis of specific behavioral changes associated with old age likely to bring the elderly person in conflict with the law. Analysis of certain types of offences sometimes committed by the elderly. Treatment and prevention strategies. The elderly as victims: proneness and vulnerability to victimization, patterns of victimization, individual and environmental correlates of victimization, consequences of victimization, fear of victimization. Treatment and preventive strategies. (Seminar) Prerequisite: CRIM 101.

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. (Seminar) Prerequisites: CRIM 101, 103 and 104. Students with credit for CRIM 211 may not take this course for further credit.
CRIM 413-3 Terrorism
This course will consider 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. (Seminar) Prerequisite: CRIM 101.

CRIM 415-3 Victimology

CRIM 416-3 Current Issues in Criminology and Criminal Justice
CRIM 417-3 Current Issues in Criminology and Criminal Justice
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 semester to semester. (Seminar) Prerequisites: CRIM 101. Reserved for Criminology majors, honors, minors and post baccalaureate diplomas. Others admitted only on written permission of the school in advance. 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 Indigenous Peoples, Crime, and Criminal Justice
An in-depth examination of indigenous peoples and the criminal justice system. Historical and contemporary consideration of indigenous-white contact. Indigenous conflict with the law and involvement in the criminal justice system. Crime and the delivery of criminal justice services in the Canadian north, including the role of the RCMP and the activities of the circuit criminal court. Examination of federal and provincial policies designed to reduce over-representation of indigenous peoples in the criminal justice system. The creation of indigenous-controlled programs and criminal justice structures to reduce indigenous conflict with the law. Comparative study of other jurisdictions including Greenland, the United States and Australia. (Seminar) Prerequisite: CRIM 101.

CRIM 420-3 Advanced Topics in Criminological Research
An extension of CRIM 120 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. (Lecture/Seminar) Prerequisites: CRIM 320.

CRIM 430-3 Judicial Administration and Planning
Theory and practice of court administration. Examination of the organization of court systems with particular attention to problems of administration and planning. Discussion of the various functions involved in court administration including court registries; court reporting; caseflow management; the role of the judiciary in administration; personnel, fiscal and records management; and information systems. (Lecture/Seminar) Prerequisites: CRIM 101, 131 and 231.

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 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. (Seminar) Prerequisite: CRIM 101.

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 336.

CRIM 437-3 Crimes Among the Professional Elite
This course will examine 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 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. (Lecture/Seminar) Prerequisites: CRIM 101, 131 and 241. POL 251 is strongly recommended.

CRIM 442-3 Correctional Practice II
An in-depth examination of the various treatment programs utilized in corrections beyond but including traditional psychodynamic therapies, e.g., behavior modification, guided group interaction, positive peer culture, juvenile programs, academic prison education, skill development, community programs, service projects. The ethical and practical programs encountered in correctional practice. A consideration of the applicability of the precepts of clinical criminology to correctional practice. (Seminar) Prerequisites: CRIM 343.

CRIM 450-3 Techniques of Crime Prevention II

CRIM 455-3 Law Enforcement Administration and Planning
This course will cover the following topics: theory and practice of organization and administration of law enforcement agencies. Professional police management. Internal relations. Police strikes. Problems of law enforcement manpower: recruitment, selection, education, training, manpower alternatives, forecasting manpower needs. Problems of development, promotion and advancement. Personnel supervision, internal discipline. Problems of communication, information and statistics. Improving resource allocations by means of operational research. Evaluative research; cost-benefit analysis. Computer uses in law enforcement. Police-community relations. Improving police image and public attitudes towards the police. Relations with other sectors of the criminal justice system. (Lecture/Seminar) Prerequisites: CRIM 101, 131 and 151.

CRIM 461-0 Practicum IV
Fourth semester of work experience in the Criminology Co-operative Education program. (Practicum) Prerequisites: successful completion of CRIM 361 and 75 credit hours 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 registered in or have completed CRIM 320 and CRIM 369. A minimum grade of B- in CRIM 369-4 is required.
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. Prerequisites: CRIM 320 and 330. CRIM 370 is recommended. Written application to the School no later than the last day of classes of the preceding semester. Reserved for Criminology honors and majors.

CRIM 490-5 Honors Thesis
An in-depth investigation of a selected topic in criminology, including a comprehensive review of the literature and the formalization of a research proposal. Prerequisites: CRIM 320 and 330 (Note: Open by special arrangement only to Criminology honors students who have completed at least 90 semester hour credits of university work, with at least 24 credits in upper division Criminology courses. A plan must be approved by a faculty supervisor and the Undergraduate Curriculum Committee before work is begun.)

CRIM 499-8 Honors Thesis
An honors thesis is a research report written under the direction of a faculty member, a copy of which is to be permanently lodged with the school. On completion, the report is to be orally defended in a school seminar. Prerequisites: only honors students may register. Students must meet all other honors requirements. Written approval of the instructor who will direct the thesis is required in advance of any attempt to register.

Department of Economics
Location: 3602 Diamond Building
Telephone: 778.782.3508, 778.782.5944 Fax
Chair: (to be announced)

Professors Emeriti
P. Copes BA, MA (Br Col), PhD (LSE), DMilSc (Royal Roads), DrPhilos (Tromsø), FANSRF
K. Strand BA (Wash State), MS, PhD (Wis)

Alcan Fellow, Canadian Institute for Advanced Research
R.G. Lipsey BA (Br Col), MA (Tor), PhD (LSE)

BC Telephone Endowed University Professor
R.G. Harris BA (Qu), PhD (Br Col), FRSC

Professors
L.A. Boland BS (Bradley), MS, PhD (Ill)
J.F. Chant BA (Br Col), PhD (Duke)
J.W. Dean BSc (Car), MA, PhD (Harv)
S.T. Easton AB (Oberlin), AM, PhD (Chic)
B.C. Eaton BA, PhD (Colorado)
S. Globerman BA (Brooklyn), MA (Calif), PhD (NY)
R.R. Grauer BCom, MBA (Br Col), PhD (Calif)*
H.G. Grubel BA (Rutgers), PhD (Yale)
R.G. Harris BA (Qu), PhD (Br Col), FRSC
J.P. Herzog BS, PhD (Calif)*
R.A. Holmes BA, MA (Sask), PhD (Indiana)*
P.E. Kennedy BA (Qu), PhD (Wis)
M.H. Khan BSc, MA (SInd), M Soc Sc (Inst Soc Stud, The Hague), PhD (Wageningen)
J.L. Knetsch BS, MS (Mich State), MPA, PhD (Harv)**
M.A. Lebowitz BS (NY), MS (Wis)
R.G. Lipsey BA (Br Col), MA (Tor), PhD (LSE), FRSC
D.R. Maki BA (Minn), PhD (Iowa State)
J.M. Munro B Com (Br Col), MBA, DBA (Indiana)
Z.A. Spindler BA (Wis), MA, PhD (Mich State)

Associate Professors
D.W. Allen BA, MA (S Fraser), PhD (Wash)
Assistant Professors
J. Arifovic BA (Sarajevo), MA, PhD (Chic)
J. Friesen BA (Br Col), MA, PhD (Tor)
P. Gomme BA (Wilfrid Laurier), MA, PhD (Western)
M. Kamstra BA (Qu), MA (Br Col), PhD (Calif)
K. Pendakur BA, MA (Br Col), PhD (Calif)

*joint appointment with Business Administration
**joint appointment with Resource and Environmental Management

Advisors
Ms. S. King, 3663 Diamond Building, 778.782.4543/3508
Mrs. G. Seifert, 3657 Diamond Building, 778.782.4571/3508

The Department of Economics offers honors and major programs leading to the BA degree. The department also offers joint honors and joint major programs in co-operation with the Faculty of Business Administration. A minor program is offered for students who are majoring or taking honors programs in disciplines other than Economics.

Undergraduate courses
Course descriptions for all Economics undergraduate courses.

Admission Information
The Department of Economics limits admission to its major, honors and minor programs (including joint honors and joint majors). Entry into these programs will be on the basis of a formal application made to the department. To be considered for the major, honors or minor programs, students must have completed lower division required courses with at least a C- grade.

On the recommendation of the Department of Economics and the Office of the Dean of Arts, the University will establish a yearly quota - the number of students to be admitted into major, honors, and minor programs. This quota will be established on the basis of projected available course space and department resources. In advance of each competition, the department will announce the minimum cumulative GPA below which students will not normally be considered for admission.

Students may apply for admission to the major, minor or honors programs after completing 45 semester hours. Students will be selected on the basis of their CGPA and performance in required courses.

Applications for entry should be filed with the departmental advisor. Students are required to provide the appropriate documentation. Students 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 Economics 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 students in Economics programs to upper division Economics 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 they may apply for admission to the department's major, honors or minor programs. Students who meet these requirements will be admitted to the program under a provisional status and will retain the provisional status until 15 credit hours have been completed at Simon Fraser University. To continue, the CGPA for these 15 credit hours must equal or exceed the CGPA entrance requirement for non-transfer students.

Requirements for the BA Degree
All majors and honors students must meet requirements for the BA degree in either the honors or general program as described in the Faculty of Arts section of this Calendar. Students are encouraged to fulfill Faculty requirements early in their programs and to obtain broadly-based backgrounds before entering upper division courses. Major and honors students must complete the lower division requirements for their respective degree in the first 60 hours of credit prior to acceptance into major or honors programs (including joint programs).

For a course to be accepted as fulfilling a prerequisite, or for a required course to be accepted in a student's Economics program (i.e., major, joint major, honors, joint honors, minor) students must have a grade of C- or higher.

**Major Program**

**Lower Division Requirements**
Students must complete each of the following courses with a grade of at least C- prior to admission to the major program.

- BUEC 232-3 Elementary Economic and Business Statistics I
- ECON 103-3 Principles of Microeconomics
- ECON 105-3 Principles of Macroeconomics
- MATH 110-3 Introductory Mathematics for the Social and Management Sciences (preferred if BC Grade 12 Algebra has not been completed with at least a B) or MATH 100
- MATH 157-3 Calculus for the Social Sciences I (or equivalent)
- Two 200 division ECON or BUEC courses (in addition to BUEC 232)

*Plus:
* one 000, 100 or 200 level English or Philosophy course

and one 100 or 200 level History or Political Science course

and one 100 or 200 level Sociology/Anthropology or Psychology course

and one 100 or 200 level Biological Sciences, Chemistry or Physics course

**Upper Division Requirements**
With the exception of BUEC 333, students normally will not be permitted to enter the department's upper division courses during their first 60 semester hours without permission of the undergraduate chair. If BUEC 333 is taken during the first 60 semester hours, this course will not be counted toward the upper division requirements of the department or the faculty.

Normally, majors will include 45 semester hours of upper division credit in their last 60 semester hours of work toward the degree.

At least 30 semester hours of upper division credit in Economics, including
BUEC 333-3 Elementary Economic and Business Statistics II
ECON 301-5 Intermediate Microeconomic Theory
ECON 305-5 Intermediate Macroeconomic Theory
and at least two 400 division Economics courses

Group Requirements
To meet the requirements for the major program, students must include at least one of the following.

ECON 100-3 Introduction to Economics
ECON 102-3 Twentieth Century Economies
ECON 208-3 History of Economic Thought
ECON 250-3 History of Economic Development A
ECON 252-3 History of Economic Development B
ECON 353-5 Economic History of Canada
ECON 395-5 Comparative Economic Systems
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

Joint Major in Business Administration and Economics

Lower Division Requirements
The requirements are the same as those for the Economics major and the Business Administration program.

Upper Division Requirements
Students must complete at least 29 semester hours of upper division credit in Business Administration including the core courses with the following exceptions: the core course requirement that one of BUS 303, 304, 346, 349, 403, 449 or BUEC 391 be completed is waived.

BUEC 333, which must be taken, will count as upper division Economics hours rather than upper division Business Administration hours.

- at least two 400 division BUS or BUEC courses* (exclusive of Co-op Practicum and BUS 478)
- three courses beyond the core must be completed within the requirements for a concentration

plus
at least 25 semester hours of upper division credit in Economics including

BUEC 333-3 Elementary Economic and Business Statistics II
ECON 301-5 Intermediate Microeconomic Theory
ECON 305-5 Intermediate Macroeconomic Theory
and at least two 400 division Economics courses

*These courses may be within the areas of concentration.

Group Requirements
In meeting the requirements for the Major program, students must include at least one of the following courses.

ECON 100-3 Introduction to Economics
ECON 102-3 Twentieth Century Economies
ECON 208-3 History of Economic Thought
ECON 250-3 History of Economic Development A
ECON 252-3 History of Economic Development B
ECON 353-5 Economic History of Canada
ECON 395-5 Comparative Economic Systems
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

**Note:** Majors, joint majors and joint honors are required to complete at least one of these courses while honors students must complete at least two.

**Joint Major in Latin American Studies and Economics**
Please refer to the Department of Spanish and Latin American Studies section for requirements.

**Honors Program**
In addition to the lower division courses for the major in Economics, students must receive credit for at least 50 semester hours of upper division credit in Economics including the following.

- BUEC 333-3 Elementary Economic and Business Statistics II  
- ECON 301-5 Intermediate Microeconomic Theory  
- ECON 305-5 Intermediate Macroeconomic Theory  
- ECON 331-5 Introduction to Mathematical Economics  
- ECON 402-3 Advanced Topics in Microeconomics  
- ECON 403-3 Advanced Topics in Macroeconomics  
- ECON 435-5 Quantitative Methods in Economics  
- ECON 499-6 Honors Seminar in Economics

Students must also include at least two courses from the Economics group requirement and are responsible for ensuring they have also fulfilled all requirements for an honors degree set up by the Faculty of Arts.

**Joint Honors in Business Administration and Economics**
Students must include at least one course from the Economics group requirements.

**Lower Division Requirements**
Students must satisfy the lower division requirements for a joint major in Business Administration and Economics.

**Upper Division Requirements**
At least 35 semester hours of upper division credit in Business Administration including the core courses with the exception of BUEC 333, which is counted as Economics upper division hours rather than Business Administration upper division hours (see Core Courses under Honors Program in the Faculty of Business Administration section of the Calendar)

and

an area of concentration

and

at least three 400 division Business Administration courses* (exclusive of Co-op Practicum and BUS 478)

plus

at least 32 semester hours of upper division credit in Economics or BUEC including

- ECON 301-5 Intermediate Microeconomic Theory  
- ECON 305-5 Intermediate Macroeconomic Theory  
- ECON 331-5 Introduction to Mathematical Economics  
- ECON 402-3 Advanced Topics in Microeconomics (or 403-3 Advanced Topics in Macroeconomics)  
- ECON 435-5 Quantitative Methods in Economics  
- ECON 499-6 Honors Seminar in Economics  
- BUEC 333-3 Elementary Economic and Business Statistics II

*These courses may be within the areas of concentration.
Minor Program
A minimum grade of C- in all of the required courses listed below is required.

ECON 103-3 Principles of Microeconomics
ECON 105-3 Principles of Macroeconomics
two 200 division ECON or BUEC courses (excluding BUEC 232)

and
at least 15 semester hours of upper division credit in Economics or BUEC courses, taken following the completion of 60 credit hours.

Note: Students majoring in Business Administration may not count BUEC 333 as part of the required semester hours in Economics.

Co-operative Education
The Department of Economics offers a co-operative education program for qualified students who wish to acquire practical experience in economics. The program entails planned semesters of study and employment in the area of the student's choice.

To be eligible for admission to the Co-operative Education Program, students must have completed 30 credit hours including ECON 103 (or 200) and ECON 105 (or 205). At least 12 of these 30 credit hours must be completed at Simon Fraser University with a minimum CGPA of 2.75.

Arrangements for the work semesters are made through the Faculty of Arts Co-op Co-ordinator at least one semester in advance. For further details, students should refer to the Co-operative Education section of the Calendar.

Economics Undergraduate Courses

Faculty of Arts
See also courses listed under Business Administration and Economics (BUEC).

Prerequisites for any course may be waived for individual students 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.

ECON 100-3 Introduction to Economics
A preliminary approach designed to familiarize students with economic ideas and methods of economic analysis. The focus will vary from semester to semester. (Lecture/Tutorial)

ECON 101-3 The Canadian Economy
An introduction to the development of the Canadian economy and the analysis of Canadian economic problems. (Lecture/Tutorial) Students with credit for Economics courses at the 200 (or higher) division (excluding ECON 200 and 205) may not take ECON 101 for further credit.

ECON 102-3 Twentieth Century Economies
An examination of the nature, experience and prospects in the Twentieth Century of economies with differing structures, systems and levels of economic development. Consideration of the role, merits and problems of economic planning, both in developed and less developed countries. (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.

ECON 103-3 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. (Lecture/Tutorial) Prerequisite: 12 credit hours. Students with credit for ECON 200 cannot take ECON 103 for further credit.
ECON 105-3 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. (Lecture/Tutorial) Prerequisite: 12 credit hours. Students with credit for ECON 205 cannot take ECON 105 for further credit.

ECON 208-3 History of Economic Thought
A study of the evolution of the main concepts of economic theory. Attention will be given to the relationship between doctrines and the economic, political, and social environment in which they developed. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205. Students with credit for ECON 308 may not take ECON 208 for further credit.

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 centralised banking system and in relation to international finance. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205. Students with credit for ECON 310 cannot take ECON 210 for further credit.

ECON 250-3 History of Economic Development (A)
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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and ECON 105 or 205. Students with credit for ECON 150 cannot take ECON 250 for further credit.

ECON 252-3 History of Economic Development (B)
The industrial period. Analysis of the main historical features of economic development from the industrial revolution to the present. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and ECON 105 or 205. Students with credit for ECON 152 cannot take 252 for further credit.

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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205. Students with credit for ECON 360 cannot take this course for further credit.

ECON 261-3 Resources and the Economy of British Columbia
Review of the development of the British Columbia economy with particular emphasis on the role played by natural resources. Examination of the economics of major BC natural resources and the design of policies for their exploitation. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205. Students with credit for ECON 201 cannot take this course for further credit.

ECON 278-0 Economics Practicum I
First semester of work experience in the Economics Co-operative Education Program. Prerequisites: 30 credit hours including ECON 103 or 200 and ECON 105 or 205. At least 12 of these 30 hours must be completed at Simon Fraser University with a minimum CGPA of 2.75. Students should apply to the Faculty of Arts co-op co-ordinator by the end of the third week of the preceding semester.

ECON 279-0 Economics Practicum II
This is the second semester of work experience in the Economics Co-operative Education Program. Prerequisites: Economics lower division requirements and completion of 45 semester hours 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 Co-op co-ordinator by the end of the third week of the preceding semester.

ECON 282-3 Selected Topics in Economics
The subject matter will vary from semester to semester. (Lecture/Tutorial) Prerequisites: ECON 103 or 200, and 105 or 205.

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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and ECON 105 or 205.
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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and ECON 105 or 205.

ECON 301-5 Intermediate Microeconomic Theory
The study of the main principles and techniques of economic analysis in their application to modern theories of price, production, distribution, and the theory of the firm. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and ECON 105 or 205; MATH 157; and two 200 division ECON or BUEC courses (excluding BUEC 232), 60 credit hours or permission of the department.

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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; and two 200 division ECON or BUEC courses (excluding BUEC 232), 60 credit hours or permission of the department.

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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205, or permission of the department; 60 credit hours.

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. (Lecture/Tutorial) Prerequisites: ECON 301 and MATH 157 or 151; 60 credit hours.

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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours or permission of the department. Students with credit for ECON 442 cannot take this course for further credit.

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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours or permission of the department. Students with credit for ECON 445 cannot take this course for further credit.

ECON 353-5 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. (Lecture/Tutorial) Prerequisites: ECON 301; 60 credit hours.

ECON 355-4 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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours. Students with credit for ECON 455 may not take ECON 355 for further credit.

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. (Lecture) Prerequisites: ECON 301; 60 credit hours.
ECON 367-3 Transportation
The economic function of transportation; analysis of cost, demand and pricing in various transportation industries; evaluation of public policy toward provision of transportation facilities and the regulation of transport industries. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours.

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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours. Students with credit for ECON 365 may not take this course for further credit.

ECON 378-0 Economics Practicum III
This is the third semester of work experience in the Economics Co-operative Education Program. Prerequisites: Economics lower division requirements and completion of 60 credit hours 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 co-op co-ordinator by the end of the third week of the preceding semester.

ECON 379-0 Economics Practicum IV
This is the last semester of work experience in the Economics Co-operative Education Program. Prerequisites: ECON 301-5 or ECON 305-5 and 75 credit hours with a CGPA of 2.75. Students should apply to the Faculty of Arts co-op co-ordinator by the end of the third week of the preceding semester.

ECON 381-5 Labor Economics
Analysis of the economics of the labor market with particular emphasis on wage determination, the concept of full-employment, and manpower policies. (Lecture/Tutorial) Prerequisites: ECON 301; 60 credit hours.

ECON 382-3 Selected Topics in Economics
The subject matter will vary from semester to semester. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours.

ECON 383-3 Selected Topics in Economics
The subject matter will vary from semester to semester. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours.

ECON 387-3 Selected Topics in Economics
The subject matter will vary from semester to semester. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours.

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 analyzed, ranging from the allocative effects of alternative property rights to contract tort and nuisance law, out-of-court settlements and alternative legal fee structures. (Lecture/Tutorial) Prerequisites: ECON 301; 60 credit hours.

ECON 390-3 Canadian Economic Policy
A description and analysis of all types of Canadian economic problems without devoting too much attention to any one specialized area. Both macro and microeconomic problems will be discussed. Topics will include inflation, employment, stability, growth, regional problems, agricultural policies, national identity problems, international policy, natural resource policies with particular emphasis on current problems. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours.

ECON 392-3 Public Finance
The study of public goods, redistribution of income, and taxation, with emphasis on efficiency and equity as criteria for decision-making in the public sector. (Lecture/Tutorial) Prerequisites: ECON 301; 305; 60 credit hours. Students with credit for ECON 491 may not take ECON 392-3 for further credit.
ECON 395-5 Comparative Economic Systems
Economic analysis of various methods of the allocation of resources and distribution of income. Comparative study of capitalist, communist, socialist, and mixed forms of national economic organization. (Lecture/ Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours.

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. Prerequisites: ECON 103 or 200 and ECON 105 or 205; 60 credit hours.

ECON 402-3 Advanced Topics in Microeconomics
A series of topics of a more technical nature than those developed in Economics 301. The topics include demand, supply, general equilibrium, and applied welfare measures. (Seminar) Prerequisites: ECON 301, 305 and 331; 60 credit hours.

ECON 403-3 Advanced Topics in Macroeconomics
A series of topics of a more technical nature than those developed in Economics 305 and 310. The topics include treatment of rational expectations, the welfare costs of inflationary finance, theories of unemployment and inflation. (Seminar) Prerequisites: ECON 301, 305 and 331; 60 credit hours.

ECON 404-3 Honors Seminar in 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. This course would be of interest to all honors social science students in 7th or 8th level. (Seminar) Prerequisite: 90 credit hours.

ECON 407-3 Seminar in Marxian Economics
Examination of particular areas of current interest and work in Marxian economics. Focus will vary from semester to semester. (Seminar) Prerequisite: ECON 309 or permission of the department.

ECON 409-3 Seminar in Economic Thought
Consideration of particular economic theorists, schools of thought or themes in economic thought. Focus will vary from semester to semester. (Seminar) Prerequisites: ECON 301 and 305, or permission of the department; 60 credit hours.

ECON 410-3 Seminar in Monetary Theory
Analysis of money as an economic variable; role of money in micro and macroanalysis. (Seminar) Prerequisites: ECON 210 or 310, 301, and 305; 60 credit hours.

ECON 422-3 Seminar in Game Theory
An introduction to the basic concepts of game theory and their application to problems in a number of areas. (Seminar) Prerequisites: ECON 301, 60 credit hours; or permission of the department.

ECON 425-3 Seminar in Industrial Organization
This course will cover topics in industrial organization in depth. Topics may include theories of the firm and contractual behavior, the economics of vertical restraints, product differentiation, theories of market structure, an analysis of empirical industrial organization studies, topics in competition policy or antitrust law, public utility regulation. Emphasis will be given to covering a limited number of issues in detail rather than attempting a broad survey of industrial organization theories. (Seminar) Prerequisites: ECON 301; 60 credit hours.

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. (Seminar) Prerequisites: ECON 301 and 305, 60 credit hours; or permission of the department.
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. (Lecture/Tutorial) Prerequisites: ECON 301 and 305; MATH 232 or ECON 331; 60 credit hours.

ECON 435-5 Quantitative Methods in Economics
The application of econometric techniques to the empirical investigation of economic issues. (Lecture/Tutorial) Prerequisites: ECON 301 and 305; BUEC 333; 60 credit hours.

ECON 443-3 Seminar in International Trade
Focus will vary from semester to semester. (Seminar) Prerequisites: ECON 301, 305 and 342; or permission of the department; 60 credit hours.

ECON 446-3 Seminar in International Finance
Focus will vary from semester to semester. (Seminar) Prerequisites: ECON 301, 305 and 345, or permission of the department; 60 credit hours.

ECON 450-3 Seminar in Quantitative Economic History
Focus will vary from semester to semester. (Seminar) Prerequisite: ECON 301, 305 and 353 or permission of the department; 60 credit hours.

ECON 451-3 Seminar in European Economic History
A detailed examination of the major issues in European economic history. (Seminar) Prerequisites: ECON 301 and 305; 60 credit hours. Students with credit for ECON 351 may not take ECON 451-3 for further credit.

ECON 455-3 Seminar in Economic Development
Topics in economic development. (Seminar) Prerequisite: ECON 305 and 355, and 60 credit hours.

ECON 459-3 Seminar in Economic Demography
Analysis of the economic forces that affect key population variables such as mortality, natality and migration. (Seminar) Prerequisites: ECON 301 and 305; 60 credit hours.

ECON 460-3 Seminar in Environmental Economics
Focus will vary from semester to semester. (Seminar) Prerequisites: ECON 301, 305; 60 credit hours.

ECON 468-3 Seminar in Regional Economic Development
Examination of the regional disparity problem, with particular reference to the Canadian situation, its causes and policy remedies. Analysis of migration, capital, and trade flows between regions. Economic effects of the policies and institutions of Canadian federalism. (Seminar) Prerequisite: ECON 103 or 200 and 105 or 205; ECON 368; 60 credit hours.

ECON 478-0 Economics Practicum V
This is an optional semester of work experience in the Economics Co-operative Education Program. Prerequisites: ECON 301, 305, one 400 division course and 90 credit hours and a CGPA of 2.75. Students should apply to the Faculty of Arts co-op coordinator by the third week of the preceding semester.

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. (Seminar) Prerequisites: Either ECON 381 or both of 301 and 305; 60 credit hours.

ECON 482-3 Selected Topics in Economics
The subject matter will vary from semester to semester depending upon the interests of faculty and students. (Seminar) Prerequisites: ECON 301 and 305; 60 credit hours.
ECON 483-3 Selected Topics in Economics
The subject matter will vary from semester to semester depending upon the interests of faculty and students. (Seminar)
Prerequisites: ECON 301 and 305; 60 credit hours.

ECON 484-3 Selected Topics in Economics
The subject matter will vary from semester to semester depending upon the interests of faculty and students. (Seminar)
Prerequisites: ECON 301 and 305; 60 credit hours.

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. (Seminar) Prerequisites: ECON 301 and 305; 60 credit hours.

ECON 496-3 Selected Topics in Economics
The subject matter will vary from semester to semester depending upon the interests of faculty and students. (Seminar)
Prerequisites: ECON 301 and 305; 60 credit hours.

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 credits. Prerequisites: ECON 301 and 305 and permission of the undergraduate chair of the department; 60 credit hours.

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. (Seminar) Prerequisites: ECON 301, 305, 435 (co-requisite), one additional 400 level course in Economics, minimum CGPA of 3.0.

Department of English
Location: 6129 Academic Quadrangle
Telephone: 778.782.3136
Chair: K. Mezei BA (York), MA (Car), PhD (Qu)

Professors Emeriti
R.F. Blaser BA, MA, MLS (Calif)
P.M. Buitenhuis BA, MA (Oxf), PhD (Yale)
F.H. Candelaria BA (Texas), PhD (Missouri)
G.R. Elliott BA, MA (Br Col), AM (Harv)
R.N. Maud AB, PhD (Harv)

Professors
S.A. Black BA, MA (Calif State), PhD (Wash)
G. Bowering BA, MA (Br Col)
R.M. Coe BA (CUNY), MA (Utah), PhD (Calif)
J.R. Curtis BA (Yale), MA (Mich), PhD (C’nell)
P. Delany B Com (McG), AM (Stan), MA, PhD (Calif), FRSL, FRSC
S. Delany BA (Wellesley), MA (Calif), PhD (Col)
S. Djwa BEd, PhD (Br Col), Chair of Department
E.F. Harden AB (Prin), AM, PhD (Harv)
A. Messenger BA (Oberlin), BA, MA (Oxf), PhD (Cornell)
K. Mezei BA (York), MA (Car), PhD (Qu), Chair of Department
R.A. Miki BA (Manit), MA (S Fraser), PhD (Br Col)
J. Mills BA (Br Col), MA (Stan)
M. Page MA (Camb), DPSA (Oxf), MA (McM), PhD (Calif)
A. Rudrum BA (Lond), PhD (Nott)
M. Steig BA (Reed), MA, PhD (Wash)
D. Stouck BA (McM), MA (Tor)
J. Zaslove BA (Case W Reserve), PhD (Wash)*

Associate Professors
C.M. Banerjee BA, MA (Delhi), PhD (Kent State)
H. DeRoo BA (McM), MA (Car), PhD (Lond)
J.E. Gallagher BA (St Michael's, Vi), PhD (Notre Dame, Ind)
C. Gerson BA (S Fraser), MA (Dal), PhD (Br Col)
M.D. Harris BA (Harv), PhD (Buffalo)
A. Lebowitz BA (New Rochelle), MA (Wis), Associate Dean of Arts
K.F. Paulson BA (St Olaf), MA (Minn), PhD (Calif)
M.A. Stouck BA (McM), MA, PhD (Tor), Co-ordinator of Humanities Program
J. Sturrock BA, MA (Oxf), PhD (Br Col)

Assistant Professors
P. Budra BA, MA, PhD (Tor)
L.A. Davis BA (Sask), MA, PhD (Calif)
M.A. Gillies BA (Alta), MA, PhD (Oxf)
T. Grieve BA, MA (S Fraser), PhD (Johns H)
P.M. St. Pierre BA (Br Col), MA (Qu), PhD (Syd)
E.A. Schellenberg BEd, BA (Winn), MA, PhD (Ott)
S. Wong BA (Col), PhD (Prin)

Senior Lecturer
J. Giltrow BA, MA, PhD (S Fraser)

Lecturers
T. Bose BA, MA (Calc), B Lit (Oxf), PhD (Br Col)
A. Hungerford BA, MA (S Fraser)
S. Roberts BA, MA (S Fraser)

Laboratory Instructor
M. Valiquette BA, MA (S Fraser)

*joint appointment with Humanities

Advisor
Ms. H. Newcombe, 6137 Academic Quadrangle, 778.782.3371

The Associate Chair and other faculty are available to give advice about the Department of English. Enquiry at the Departmental Office. Students planning to enter the honors program are particularly encouraged to consult with departmental advisors about the nature of the program.

Undergraduate courses
Course descriptions for all English undergraduate courses.

Lower Division Courses
The department's basic lower division courses are ENGL 101, 102, 103, 104, 199, 204, 205 and 206. Credit or advanced standing in any two of ENGL 101, 102, 103, 104, and 199, and any one of ENGL 204, 205 and 206 is prerequisite to entry into upper division English courses.

ENGL 101, 102, 103, 104, 199, 212, 214, 221, 222 and 228 have no prerequisites; they may be taken in any order by any student. ENGL 204, 205, 206, and ENGL 210 may not be taken without previous credit or standing in two of ENGL 101, 102, 103, 104, and 199. Note that ENGL 199 and 210 cannot both be used to fulfill the requirements for the major in English.
Upper Division Courses
The upper division offerings deal chiefly with specific historical, critical and aesthetic areas within the literary tradition. All courses in the 300 division (300 to 388) have four classroom hours presented either as two hours of lecture and two hours of seminar, or as four hours of seminar only. The department's 400 division courses are not scheduled, do not require classroom attendance, and have no pre-established general reading lists and outlines. They offer students an opportunity for individual study in subjects of particular interest to them. No 400 division course may be entered without prior agreement of a member of the department and the approval of the Chair of the Department.

Major Program
Normally, an English major, before proceeding to upper division English courses, shall obtain credit or standing for three of

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 199-3 University Writing

all of
ENGL 204-3 Literature of the Anglo-Saxon period, Middle Ages and Renaissance
ENGL 205-3 Literature of the Late Renaissance and Enlightenment
ENGL 206-3 Literature of the Romantic and Victorian Periods

Any one, but not more than one, of ENGL 101, 102, 103, 104, and 199 may be replaced by any one of ENGL 210, 212, 214, 221, 222 or 228; or by any three unspecified transfer credits in English. However, ENGL 199 and 210 cannot both be used to fulfil the requirements for the major in English.

A student who enters the University with 18 transfer credits in English will be deemed to have met the department's lower division requirements for a major in English provided some of those credits are transferable as ENGL 101, 102, 103, 104 or 199, and some as ENGL 204, 205 or 206. ENGL 199 and 210 cannot both be counted towards the 18 credits. Students declaring a major in English and found deficient in the department's lower division requirements must make up the deficiency. Such make up normally shall be attempted before the student takes upper division courses in English, but the department may permit it to be attempted concurrently or to be deferred in order to avoid timetable conflicts or for other good cause.

An English major must obtain 32 hours in upper division English courses, one of which must come from within the series ENGL 300 to 306; one must come from within the series ENGL 308 to 312; one must come from within the series ENGL 314 to 322; and the remainder may come from anywhere within the series ENGL 300 to 388 and the series ENGL 441 to 446. All of these courses may be taken in any order. Exceptionally, and only with the permission of the department, other English courses of equivalent content may be substituted for those required in the series 300 to 306, 308 to 312, and 314 to 322. With the permission of the department, up to 8 semester hours derived from courses on literature given by other departments may be substituted for up to 8 hours in upper division English courses. If ENGL 388 is used for credit towards the English major, a maximum of 4 semester hours derived from courses on literature given by other departments may be substituted for up to 4 semester hours in upper division English courses with the permission of the department.

English majors who plan to teach or to pursue post BA studies in English are advised to distribute their course selections so as to obtain a general understanding of the range of English literature. They should also consider substantially exceeding the 32 upper division English credits required in their programs or consider seeking admission to the honors English program.

Honors Program
This program is intended for the student who has a special interest in English Literature, and wishes to pursue studies beyond the course work required for the major. The program will provide a core of essential knowledge of criticism provided by ENGL 364 and 366, and, with the honors essay, independent writing and research on a topic of the student's choice.

Students proposing to enter honors English should take the same lower division English courses as English majors. On completion, students may apply for admission to the honors program. A GPA of 3.0 in all English courses taken at Simon Fraser University is required for acceptance and continuance in the program but does not in itself guarantee either.
Normally, a student in honors English must obtain 52 credit hours in upper division English courses, one of which must be from within the series ENGL 300 to 306; one must from within the series ENGL 308 to 312; one from within the series 314 to 322; one from within the series 354 to 361; four must be ENGL 364, 366, 494 and 496; and the remainder may come from anywhere within the series ENGL 300 to 388 and ENGL 441 to 446. Exceptionally, and only with permission of the department, other English courses of equivalent content may be substituted for those required in the series 300 to 306; 308 to 312; 314 to 322; and 354 to 361. With permission of the department, up to eight semester hours derived from literature courses given by other departments may be substituted for up to eight semester hours in upper division English courses. If ENGL 388 is used for credit towards honors English, a maximum of four semester hours may be substituted for up to four semester hours in upper division English courses with permission of the department. No courses from other departments may be substituted for the honors courses ENGL 494 and 496. A grade of B or higher must be achieved in the Honors Graduating Essay (ENGL 496-4) in which the program culminates.

**Minor Program**

For a minor in English a student must obtain credit or standing in any 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 the Essay as Literature
- ENGL 199-3 University Writing

Any one but not more than one of ENGL 101, 102, 103, 104, and 199 may be replaced by any one of ENGL 210, 212, 214, 221, 222, or 228; or by any three unspecified transfer credits in English. However, ENGL 199 and 210 cannot both be used to fulfill the requirements for the minor in English.

Students must also obtain credit or standing in the following course.

*any one of*

- ENGL 204-3 Literature of the Anglo-Saxon Period, Middle Ages and Renaissance
- ENGL 205-3 Literature of the Late Renaissance and Enlightenment
- ENGL 206-3 Literature of the Romantic and Victorian Periods

and 16 credits in upper division English, of which one must lie within the series ENGL 300 to 316. ENGL 388 may not be used for credit toward the minor. No courses from other departments may be substituted for the English courses which make up the minor.

**Languages Other Than English**

Most graduate schools require some proficiency in one or two languages other than English. Those who contemplate graduate studies in this field are advised to include language courses other than English in their programs.

**Joint Major in English and French Literatures**

The attention of students is drawn to the joint major in English and French Literatures offered in an interdepartmental program by the English and French Departments. Please see the Department of French section.

**Joint Major in English and Women's Studies**

See the Women's Studies section for requirements.

**Extended Minor Program**

An extended general 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.

**Co-operative Education Program**

This program is designed for students who wish to acquire work experience in areas related to English studies. The program entails planned semesters of study and employment in an area of the student's choice.
Requirements
To be admitted to this program, students must have completed 30 semester hours with a minimum CGPA of 3.0. Prior to admission, students must have completed five English courses (15 semester hours of credit) including

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 the Essay as Literature
ENGL 199-3 University Writing

one of
ENGL 204-3 Literature of the Anglo-Saxon Period Middle Ages and Renaissance
ENGL 205-3 Literature of the Late Renaissance and Enlightenment
ENGL 206-3 Literature of the Romantic and Victorian Periods

and two other English courses (the following are recommended)
ENGL 210-3 Composition
ENGL 212-3 Introduction to the History and Structure of English
ENGL 214-3 Reading, Writing and Rhetoric

College transfer students must complete at least 15 semester hours at Simon Fraser University before becoming eligible for admission to the Co-operative Education program. They also must satisfy the requirements shown above, or the equivalent.

Transfer students who have participated in co-operative education programs elsewhere may be credited with the semester(s) already taken. The applicability of such semesters depends on the evaluation.

Arrangements for the work semesters are made through the department's as well as the Faculty of Arts Co-operative Education Co-ordinators.

In order to continue in the program, students must maintain a minimum CGPA of 3.0 in their academic course work.

Interested students should contact the Department of English for further information. Also, refer to the Co-operative Education section in this Calendar.

English Undergraduate Courses

Faculty of Arts
The following four courses will examine representative works of literature, selected primarily from the twentieth century, in order to develop a critical awareness of the approaches to experience which modern literature reflects and techniques it employs, and to explore problems of literary evaluation. Each course will involve attention to compositional skills through individual meetings with a tutor.

ENGL 101-3 Introduction to Fiction (Lecture/Tutorial)
ENGL 102-3 Introduction to Poetry (Lecture/Tutorial)
ENGL 103-3 Introduction to Drama (Lecture/Tutorial)
ENGL 104-3 Introduction to the Essay as Literature
The literary study of non-fictional prose, focusing on the essay and on other expository forms of writing such as biography, travel, and journalistic narratives. (Lecture/Tutorial)
ENGL 199-3 University Writing
An introduction to reading, analysis and composition central to the understanding and preparation of expository writing required in university studies. (Seminar)

The following three courses are intended to provide a basis for studies in the upper division. They undertake the study of individual works in relation to the times in which they were written. The emphasis is on the distinctiveness of literary perception and the relationship of that perception to changing social, historical, and philosophical contexts.

ENGL 204-3 Literature of the Anglo-Saxon Period, Middle Ages and Renaissance
Includes attention to works from the Old English, Middle English, Tudor and Elizabethan-Jacobean periods. (Lecture/Tutorial) Prerequisites: previous credit or standing in two of ENGL 101, 102, 103, 104 and 199.

ENGL 205-3 Literature of the Late Renaissance and Enlightenment
Includes attention to such figures as Donne, Milton, Dryden, Pope, Swift and Johnson. (Lecture/Tutorial) Prerequisites: previous credit or standing in two of ENGL 101, 102, 103, 104 and 199.

ENGL 206-3 Literature of the Romantic and Victorian Periods
Includes attention to a range of figures from the major Romantics to the early moderns. (Lecture/Tutorial) Prerequisites: previous credit or standing in two of ENGL 101, 102, 103, 104 and 199.

ENGL 210-3 Composition
The study and practice of expository writing. The course examines aspects and examples of writing and relates them to the student's composition. (Lecture/Tutorial) Prerequisites: previous credit or standing in two of ENGL 101, 102, 103, 104 and 199.

ENGL 212-3 Introduction to the History and Structure of English
An examination of the origins and phases of English, and a study of English grammar sufficient to describe syntactic structures. (Lecture/Tutorial)

ENGL 214-3 Reading, Writing, and Rhetoric
Approaches to the study of rhetoric, composition, reading, and literacy. (Lecture/Tutorial)

ENGL 221-3 Canadian Literature
An introduction to major figures and themes in Canadian literature with some attention to the nineteenth century. (Lecture/Tutorial)

ENGL 222-3 American Literature
An introduction to major figures and themes in American literature with substantial attention to the nineteenth century. (Lecture/Tutorial)

ENGL 228-3 Literature in Translation
A study of works in translation which form a background to the study of literature in English. (Lecture/Tutorial)

The following courses in the 300 division are intended to acquaint the student with specific authors, genres, periods or critical theories.

Where the course title is a series of authors, at least two of them will be given substantial attention. The course may study only two authors or may draw from the other named authors, their contemporaries or the literary traditions represented by these authors.

Special studies courses examine aspects of literary study not normally covered by the other upper division courses.

Courses which specify genre, period or theoretical concerns may also include material drawn from areas other than those indicated by the title or may concentrate on a limited number of authors.

All courses have four classroom hours, which may be divided between lectures and tutorials or held entirely as seminars.
Prerequisites for all upper division English courses, unless otherwise stated, are: credit or standing in any two of ENGL 101, 102, 103, 104, 199 and in any one of ENGL 204, 205 and 206.

ENGL 300-4 Old English I: Introductory Old English
The study of the basics of the Old English language and the reading of several texts of relative simplicity.

ENGL 301-4 Old English II: Advanced Old English
Extensive study of several Old English poems. General prerequisite: as for all upper division English courses. Particular prerequisite: ENGL 300.

ENGL 304-4 Topics in Medieval Literature
Studies in 14th and 15th century literature excluding Chaucer.

ENGL 306-4 Chaucer

ENGL 308-4 Tudor Poetry and Prose

ENGL 310-4 Elizabethan and Jacobean Drama

ENGL 312-4 Shakespeare

ENGL 314-4 Seventeenth Century Prose and Verse

ENGL 316-4 Milton

ENGL 318-4 Major Authors of the Restoration and Eighteenth Century: Dryden, Swift, Pope, Johnson, Blake

ENGL 320-4 Topics in Literature and Culture in the Restoration and Eighteenth Century

ENGL 322-4 Eighteenth Century Novelists

ENGL 324-4 Blake, Wordsworth, Coleridge

ENGL 326-4 Keats, Shelley, Byron

ENGL 328-4 Tennyson, Browning, Carlyle, Mill

ENGL 330-4 Arnold, the Pre-Raphaelites, Hopkins, Ruskin, Pater

ENGL 332-4 Nineteenth Century Novelists I: Austen, the Brontes, Thackeray, George Eliot

ENGL 334-4 Nineteenth Century Novelists II: Scott, Dickens, Trollope, Meredith, Gaskell

ENGL 336-4 British Fiction 1880 – 1920

ENGL 338-4 Studies in Modernism

ENGL 340-4 Twentieth Century British Writers to World War II

ENGL 342-4 British Writers of World War II and Later

ENGL 344-4 American Prose and Poetry, Beginnings to the Civil War

ENGL 348-4 American Literature, Civil War to World War I

ENGL 349-4 Topics in American Literature
ENGL 350-4 Twentieth Century American Writers to World War II

ENGL 352-4 American Writers of World War II and Later

ENGL 354-4 Canadian Poetry and Prose, Beginnings to 1920

ENGL 356-4 Canadian Prose of the Twentieth Century

ENGL 358-4 Canadian Poetry of the Twentieth Century

ENGL 360-4 Topics in Canadian Literature

ENGL 361-4 Contemporary Canadian Writing
An intensive study of contemporary Canadian writing in areas such as critical theory, post modernism, feminism, regional literatures (excluding francophone) and genre studies.

ENGL 362-4 World Literature Written in English
The primary purpose of this course will be to examine the literatures of areas such as the Caribbean, Australia and New Zealand, Africa, India and South Asia.

ENGL 364-4 History and Principles of Literary Criticism

ENGL 366-4 Studies in Critical Approaches to Literature

ENGL 368-4 Studies in Drama

ENGL 370-4 Studies in Language

ENGL 371-4 Advanced Composition: Theory and Practice
The study of expository writing which examines theoretical approaches to composition and relates these to the practice, analysis and improvement of the student's writing. General prerequisite: as for all upper division courses in English. Particular prerequisite: ENGL 210 or permission of the department.

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 semester to semester. General Prerequisites: As for all upper division courses in English. Particular Prerequisites: permission of the department is required. Students may take more than one course in creative writing but may count only one of them toward English honors or a major or minor in English.

ENGL 374-4 Special Studies A

ENGL 376-4 Special Studies B

ENGL 378-4 Special Studies C: Single Author

ENGL 383-4 Varieties of Fantasy
Studies in various types of fantasy literature. The course will normally concentrate on one or more of the following: the Gothic novel and its descendants; modern fantasy novels; utopian and anti-utopian fiction. Students with credit for ENGL 363 may not take this course for further credit.

ENGL 387-4 Studies in Children's Literature
An intensive study of selections of children's literature from different periods. The works will be considered in relation to adult literature in English and to literary theory. The problem of whether children's literature requires the same interpretive and evaluative approaches as adult literature will be investigated. (Lecture/Seminar) Students with credit for ENGL 367 may not take this course for further credit.
ENGL 388-4 The Author and the Book in Society
This course will explore the relationships among author, text, editor, publisher, marketplace and society. Materials will be drawn from a variety of cultural and historical contexts. This course may not be used for credit towards the English minor.

The following courses, all in the 400 division, are intended to provide opportunities for individual study. Admission is by permission of the instructor and the department. ENGL 494 and 496 are open only to honors students.

ENGL 441-4 Directed Studies A
ENGL 442-2 Directed Studies B
ENGL 443-4 Directed Studies C
ENGL 444-2 Directed Studies D
ENGL 445-4 Directed Studies E
ENGL 446-2 Directed Studies F

ENGL 461-0 Practicum I
First semester of work experience in the English Co-operative Education program. Prerequisites: normally 30 semester hours with a CGPA of 3.0 including any two of ENGL 101, 102, 103, 104 and 199, any one of ENGL 204, 205 and 206. Students should apply to the Faculty of Arts Co-operative Education Co-ordinator by the end of the third week of the semester preceding the employment semester.

ENGL 462-0 Practicum II
Second semester of work experience in the English Co-operative Education program. Prerequisites: successful completion of ENGL 461 and normally 45 semester hours with CGPA of 3.0. Students should apply to the Faculty of Arts Co-operative Education Co-ordinator by the end of the third week of the semester preceding the employment semester.

ENGL 463-0 Practicum III
Third semester of work experience in the English Co-operative Education program. Prerequisites: successful completion of ENGL 462 and normally 60 semester hours with CGPA of 3.0. Students should apply to the Faculty of Arts Co-operative Education Co-ordinator by the end of the third week of the semester preceding the employment semester.

ENGL 464-0 Practicum IV
Fourth semester of work experience in the English Co-operative Education program. Prerequisites: successful completion of ENGL 463 and normally 75 hours with CGPA of 3.0. Students should apply to the Faculty of Arts Co-operative Education Co-ordinator by the end of the third week of the semester preceding the employment semester.

ENGL 494-4 Research for the Honors Graduating Essay
This course is intended for the research and preparation of materials for the honors graduating essay. (Seminar) Prerequisite: Open only to students who have been accepted into the honors program. The student must complete this course before taking ENGL 496. Admission by permission of the instructor and the department.

ENGL 496-4 Honors Graduating Essay
Admission is by permission of the instructor and the department.
First Nations Studies Program
Location: 6170 Academic Quadrangle
Telephone: 778.782.5595
Advisor: Ms. H. Coleman

The minor program in First Nations Studies offers courses for students wishing to gain expertise in the study of traditional and contemporary issues involving the aboriginal peoples of North America and Canada in particular. Designed for both First Nation students and non-Native students, its focus is on traditional cultures, languages and histories of First Nations, as well as such issues as Indian-White relations, the development of federal and provincial policy towards Native peoples, aboriginal rights and title questions, issues of economic development and self-government and gender and intergenerational issues. The objective of the minor is to present and examine critically the above issues, taking into account the perspectives of aboriginal peoples. In addition, it will expose students to 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 Native issues and research skills to practice in serving their communities and nations.

This program may be taken in conjunction with any major or honors Bachelors 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.

Burnaby campus and Harbour Centre students should note that the First Nations courses (those with a FNST designation) are available only in Kamloops through the SCES/SFU program.

Undergraduate courses
Course descriptions for all First Nations Studies undergraduate courses.

Lower Division Requirements
At least nine semester hours of lower division courses, including the following.

- 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 Ancient Peoples and Places (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 231-3 Introduction to an Amerindian Language I
- LING 232-3 Introduction to an Amerindian Language II
- LING 260-3 Language, Culture, and Society (when topic appropriate)
- SA 286-4 Native Cultures of British Columbia (A)

- STAT 103 (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 Steering Committee.

Upper Division Requirements
At least 15 semester hours of upper division courses, including

at least six semester hours from
- FNST 301-3 Issues in Applied Native Studies Research
- FNST 401-3 Aboriginal Rights and Government Relations
- FNST 402-3 The Discourse of Native Peoples
at least 9 semester hours from the following

* ARCH 332-3 Special Topics in Archaeology I
* ARCH 333-3 Special Topics in Archaeology II
* ARCH 436-3 Readings in Archaeology
ARCH 360-5 Native Cultures of North America
ARCH 386-3 Archaeological Resource Management
ARCH 474-3 Regional Studies in Archaeology: North America - Southwest
ARCH 476-5 Regional Studies in Archaeology: North America - Northwest Pacific
CRIM 419-3 Indigenous Peoples, Crime, Criminal Justice
HIST 326-3 The History of Native People in Canada
LING 430-3 Native American Languages
** LING 431-3 Language Structures I
** LING 432-3 Language Structures II
SA 386-4 Native Peoples and Public Policy
SA 387-4 Canadian Native Peoples
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.

**only when the topic is a native language.

Other courses which have First Nations content may be applied toward the minor as electives, subject to approval by the steering committee.

Credit accumulated in the Certificate in Native Studies Research may be applied toward the minor in First Nations Studies.

Co-operative Education
In conjunction with other departments in the Faculty of Arts, and other faculties offering the Co-operative Education Program, eligible students wishing to undertake a minor in First Nations Studies may apply to participate in the co-op program for work placements in native organizations or with employers in the private, public and non-profit sectors.

Certificate in Native Studies Research
This program provides a unique opportunity to explore the history and prehistory, culture, language and contemporary situation of Canadian native peoples, and to acquire basic skills in researching native issues. Particular emphasis is on the study of native people in the interior of British Columbia.

It is offered through the Simon Fraser University/Secwepemc Cultural Education Society (SCES) Program in Kamloops. All program components can be taken at the SCES Centre on the Kamloops (Shuswap) Indian Reserve, and normally require five semesters of full time study. It can be completed as a two-year program, or can be incorporated into a BA degree program.

The certificate is especially suitable for native individuals who wish to gain proficiency in studying native issues and to acquire social research skills which can be put to use in their communities and nations. It is also open to non-native students who wish to acquire skills in the above areas.

The certificate is subject to continued funding from external sources.

Admission Requirements
Normally, requirements for admission to Simon Fraser University apply. Students may be admitted under regular or special entry categories. Application assistance and advice is available at the SCES Centre in Kamloops.

Program Requirements
- Successful completion of 30 credit hours, of which 21 credit hours are earned by completing six required courses. The remaining nine credit hours are selected from the specified list of optional courses.
- Completion of a practicum, where the student can apply acquired research skills in a supervised setting.
• 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.

Core Courses
ARCH 223-3 The Prehistory of Canada
HIST 201-3 The History of Western Canada
LING 130-3 Introduction to Practical Phonetics
SA 255-4 Introduction to Social Research
SA 286-4 Native Cultures of British Columbia

and one of
SA 101-4 Introduction to Anthropology
SA 150-4 Introduction to Sociology

Optional Courses
ARCH 273-3 Archaeology of the New World
* ARCH 332-3 Special Topics in Archaeology I
* ARCH 333-3 Special Topics in Archaeology II
* ARCH 336-3 Special Topics in Prehistoric and Primitive Art
ARCH 360-5 Native Cultures of North America
* BISC 272-3 Special Topics in Biology
* BISC 372-3 Special Topics in Biology
CRIM 419-3 Indigenous Peoples, Crime, and Criminal Justice
HIST 202-3 BC and Confederation: Studies in Historical Method
HIST 326-3 The History of Native People of Canada
LING 100-3 Communication and Language
LING 231-3 Introduction to an Amerindian Language I
LING 232-3 Introduction to an Amerindian Language II
LING 260-3 Language, Culture and Society
SA 100-4 Perspectives on Canadian Society
SA 201-4 Anthropology of Modern Life
* SA 292-4 Special Topics in Sociology
* SA 293-4 Special Topics in Anthropology
SA 386-4 Native Peoples and Public Policy
SA 387-4 Canadian Native Peoples
SA 388-4 Comparative Studies of Minority Indigenous Peoples
* SA 396-4 Selected Regional Areas*
* SA WS 200-3 Women in Cross-Cultural Perspective

*when topic is appropriate

The practicum component of the program can be fulfilled by selecting one of the three following options. Some courses within each of the options have prerequisites and accordingly students should plan their programs in advance.

Option 1
SA 141 is required. This is the first semester of the Co-operative Education Program in Sociology and Anthropology. The employment situation must be acceptable to the Native Studies Research Program.

Option 2
At least five credit hours of a field school in Archaeology, involving survey and excavation of a native heritage site are required.
Option 3
SA 360 is required, which permits a faculty member to supervise an independent field research project acceptable to the Native Studies Research Program.

Note: Some courses taken at the Burnaby Mountain or Harbour Centre campuses may count towards the certificate program, subject to approval of the certificate steering committee. Credit for a maximum of three courses (totalling not more than 10 credit hours) of comparable content and level from an approved college or university may be transferred toward program requirements, subject to University regulations governing transfer credits, and subject to approval of the certificate steering committee. Credits applied to this certificate may be applied also to major programs or minor programs or to a Bachelors degree under the normal regulations governing those programs, but may not be applied to another Simon Fraser University certificate or diploma.

First Nations Studies Undergraduate Courses

Faculty of Arts

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. (Lecture/Seminar)

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. (Lecture/Seminar) Prerequisite or corequisite: FNST 101.

FNST 301-3 Issues in Applied First Nations Studies Research
An examination of research strategies and issues involving contemporary First Nations communities. Besides the study of methodology and ethical issues involving research on native peoples, students will critically examine a number of case studies and carry out a small scale research project under the supervision of the instructor. (Lecture/Seminar) Prerequisites: FNST 101 and 201. SA 255 or equivalent lower division research methods course highly recommended.

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. (Lecture/Seminar) Prerequisites: FNST 101 and 201. POL 221 recommended.

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. (Lecture/Seminar) Prerequisites: FNST 101 and 201.
Department of French
Location: 8108 Classroom Complex
Telephone: 778.782.4740
Chair: J. Viswanathan L, MA (Ill), DsL (Liège)

Professor Emeritus
C.P. Bouton L, MA Lettres, Dipl d'Et Sup DsL (Paris)

Professor
M.C. Fauquenoy L, MA Dr 3rd Cy (Paris)

Associate Professors
B.E. Bartlett BA, MA (Oxf), MA (Br Col) MA (Yale), PhD (S Fraser)
R. Davison BA, MA, PhD (McG)
G. Merler BA (Br Col), MA, PhD (Laval)
J. Viswanathan L, MA, MA (Br Col), PhD (Laval), Chair
P. Wrenn BA, MA, PhD (Tor)

Assistant Professors
C. Nivet MA (Tours), MA, PhD (Calif)
G. Poirier BA (Laval), MA, PhD (McG)
S. Steele BA, MA (Br Col), PhD (Tor)

Senior Lecturers
C.N. Luu-Nguyen BEd (Saigon), MA (Monterey Inst Foreign Studies)
M. McDonald L, MA (Bordeaux), MA (S Fraser)

Lecturer
C. Trépanier BA, MA (Laval)

Advisor
Ms R. Gould, 8108A Classroom Complex, 778.782.4505

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 Spanish. 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.

Undergraduate courses
Course descriptions for all French undergraduate courses.

Initial Course Selection
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 (except FREN 199 and 299).

French Language Placement Test
Students fitting into the following categories need not take the placement test but should register in the course indicated below.

- BC grade 12 French completed within the last three years who received a final grade of A: register in FREN 201
- BC grade 12 French completed (irrespective of grade) within the last three years and who have subsequently spent at least six weeks in a francophone environment: register in FREN 201
- BC grade 12 French completed within the last three years who do not meet the above two conditions: register in FREN 151
- Students who have completed grade 11 French within the last three years and have taken no more French since: register in FREN 101
• Fewer than three years of French taken in high school and no other French: register in FREN 100
• High school taken in a francophone educational system in a francophone country or province: register in FREN 230/240, 270, or 301

All others are required to take the placement test including the following.

• French Immersion, Programme Cadre and IB students
• college/university transfer students with transfer credits in French
• students from other provinces or countries
• students who have taken any credit/non-credit French course of 6 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 151, and/or 201, and/or 202, and/or 206

Those required to take the placement test are urged to consult the Course Timetable and Registration Instructions for dates and times of the tests.

Course Challenge
Up to 13 semester hours of lower division French courses may be challenged by students receiving advanced placement. Courses open to challenge are: FREN 151, 201 or 216, 202 and 206. Students may challenge lower level language courses only when registered in one of FREN 201 (or 216), 202, 206, or 301. Challenge of language courses lower than the one actually registered in may be initiated by filling out and signing a course challenge form, obtainable from the French general office. The challenge must be approved by the department and submitted to the Office of the Registrar prior to the tenth day of classes. Successful completion (with a grade of at least C) of the language course actually taken automatically adds the challenge credit to the student's transcript. See course challenge in the Registration section.

Honors, Major, Extended Minor Programs
To be approved in a program, a student must have successfully completed (i.e. obtained a minimum grade of 2.0 or better in each of) the following courses or their equivalents: FREN 151, 201 or 216, 202, 206, 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 degree in French, the following courses are required.

Lower Division Requirements
all of
* FREN 151-4 French I
* FREN 201-3 Intermediate French I
* FREN 202-3 Intermediate French II
* FREN 206-3 Intermediate French III
FREN 270-3 Introduction to French Linguistics I

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 (see above).

Upper Division Requirements

Major
FREN 301-3 Advanced French Composition I
FREN 360-3 Intermediate French Literature
FREN 370-3 Introduction to French Linguistics II
A further 21 semester hours of French, to be chosen from among the remaining courses at the 300 and 400 division, must be completed.

Students wishing to concentrate in French linguistics are advised to consider a extended minor in general linguistics.

Honors
FREN 301-3 Advanced French Composition I
FREN 360-3 Intermediate French Literature
FREN 370-3 Introduction to French Linguistics II

A further 41 semester hours of French, to be chosen from among the remaining courses at the 300 and 400 division, must be completed. The latter must include, in the last semesters 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 semesters) in another language in addition to English and French.

Extended Minor
all of
FREN 301-3 Advanced French - Composition I
FREN 302-3 Advanced French - Composition II

one of
FREN 360-3 Intermediate French Literature
FREN 370-3 Introduction to French Linguistics II

A further 6 semester hours of French, to be chosen from among the remaining courses at the 300 and 400 division, must be completed.

Note: LING 360 or FREN 310 may be counted towards the upper division requirements for the major, honors and extended minor programs in French in a Bachelor of Education degree program, and/or for the major and honors programs in French in a Bachelor of Arts degree.

LING 360 and FREN 310 may not both be used in partial fulfillment of these requirements.

Courses in French
Courses are offered in the following fields.

French Language
FREN 100-3 Introductory French I
FREN 101-3 Introductory French II
FREN 151-4 French I
* FREN 199-3 Writing French I: Spelling and Grammar
FREN 201-3 Intermediate French I
FREN 202-3 Intermediate French II
FREN 205-1 French Conversation
FREN 206-3 Intermediate French III
FREN 216-3 French for Immersion Program Students
* FREN 299-3 Writing French II: Intermediate Composition
FREN 300-3 Advanced French - Conversation
FREN 301-3 Advanced French - Composition I
FREN 302-3 Advanced French - Composition II
*restricted entry to these Distance Education course

**French Linguistics**
FREN 301 and 302 represent the formal culmination (but not the end) of the student's training in the use of the French language. 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, analyse and describe various linguistic aspects of the French language). These latter concerns form the central objectives of the 400 division French linguistics courses.

**Linguistic Theories**
- FREN 270-3 Introduction to French Linguistics I
- FREN 370-3 Introduction to French Linguistics II
- FREN 414-3 French Linguistic Theories

**Structure of French**
- FREN 411-4 Modern French: Morphology
- FREN 412-4 Modern French: Syntax
- FREN 413-4 Modern French: Phonology
- FREN 420-3 French Semantics and Lexicology

**Evolution of French**
- FREN 407-4 History of French: Phonology
- FREN 408-4 History of French: Morphology and Syntax

**French Dialects**
- FREN 421-3 Varieties of French
- FREN 422-3 Canadian French

**French Applied Linguistics**
- FREN 310-3 Linguistics and French Language Learning
- FREN 311-3 The Acquisition of Vocabulary
- FREN 312-3 Corrective Phonetics

**French Literature**
200 Division Courses: FREN 240 and 230 introduce students to basic concepts and methods of literary analysis as well as the sociocultural background of a few short modern French and French-Canadian works of fiction, drama and poetry. They also aim to improve language competence: all lectures, class discussions and assignments are in French. FREN 230 or 240 are prerequisites for FREN 360.

300 Division: 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 seventeenth, eighteenth and nineteenth centuries is also discussed. FREN 360 is a prerequisite for all 400 division French literature courses.

400 Division: These courses study specific literary movements or genres through various critical approaches: thematic or structural. The emphasis remains on close textual analysis rather than literary history.

**400 Division Courses on Literary Movements**
- FREN 460-4 Introduction to Medieval and Renaissance Texts
- FREN 463-4 Literature of the Seventeenth Century
- FREN 465-4 Literature of the Eighteenth Century
- FREN 467-3 Romanticism
- FREN 470-4 Realism to Naturalism

**400 Division Courses on Genres**
- FREN 430-3 The French-Canadian Novel and Theatre
- FREN 431-3 French-Canadian Poetry
- FREN 472-3 The Contemporary Theatre
FREN 474-3 French Poetry
FREN 475-3 The Contemporary Novel

**French Linguistics/Literature**
The following courses are intended 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 406-3 French Stylistics
FREN 480-2 Seminar I
FREN 490-3 Linguistics and Literary Criticism
FREN 491-3 Readings in French Linguistics and/or Literary Criticism
FREN 492-3 Honors Essay

In addition, a number of courses are available to students who do not wish to specialize in French. These are all taught in English.

FREN 198-3 Reading French I
FREN 298-3 Reading French II
FREN 140-3 French Civilization
FREN 341-4 French-Canadian Literature in Translation

**Joint Major in English and French Literatures**
The joint major is an interdepartmental program, usually within a BA, designed for students who are interested in exploring the many close relationships between English and French literatures.

*Advisors*
Ms. R. Gould, 778.782.4505, Department of French
Dr. J. Viswanathan, 778.782.4823, Department of French
Dr. M. Harris, 778.782.3127, Department of English
Ms. H. Newcombe, 778.782.3371, Department of English

**Lower Division Courses**
The same lower division course prerequisites as they appear for both English and French majors must be fulfilled.

French

*all of*
FREN 151-4 French I
FREN 201-3 Intermediate French I
FREN 202-3 Intermediate French II
FREN 206-3 Intermediate French III

(or exemption from these four courses FREN 151, 201, 202, 206)

*one of*
FREN 230-3 Introduction to French-Canadian Literature
FREN 240-3 Introduction to French Literature: Modern French Literature (16 semester hours)

*recommended*
FREN 270-3 Introduction to French Linguistics I

English

*three of*
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
ENGL 199-3 University Writing

_all of_
ENGL 204-3 Literature of the Anglo-Saxon Period, Middle Ages and Renaissance
ENGL 205-3 Literature of the Late Renaissance and Enlightenment
ENGL 206-3 Literature of the Romantic and Victorian Periods
(18 semester hours)

Total 34 semester hours

Any one but not more than one of ENGL 101, 102, 103, 104, and 199 may be replaced by any one of ENGL 210, 212, 214, 221, 222, and 228; or by any three unspecified transfer credits in English. However, ENGL 199 and 210 cannot both be used to fulfill the requirements of the joint major.

Students who plan to concentrate on French and English Canadian literatures should take ENGL 221-3 Canadian Literature and FREN 230-3 Introduction to French-Canadian Literature.

The following course is recommended if the student is interested in literatures in other languages or relationships between literature and the other arts.
ENGL 228-3 Literature in Translation

_Upper Division Courses_

Students must complete 20 upper division hours in French and 20 upper division hours in English to achieve a specialization in literary studies as well as a selection of complementary courses as follows.

French
FREN 301-3 Advanced French - Composition I
FREN 360-3 Intermediate French Literature (6 semester hours)

plus 14 semester hours from the 400 level French Literature courses, selected according to the guidelines for course selection (see below).

The following courses are recommended if the student is interested in the linguistic analysis of literary texts.
FREN 370-3 Introduction to French Linguistics II
FREN 490-3 Linguistics and Literary Criticism

English
Students are required to complete 20 semester hours in upper division English courses, one of which must come from within the series ENGL 300-316. Courses should be selected according to guidelines (see below).

The following are recommended if the student is interested in critical theory.
ENGL 364-4 History and Principles of Literary Criticism
ENGL 366-4 Studies in Critical Approaches to Literature

Joint majors (or prospectives) in English and French Literatures must plan their program in consultation with the program faculty advisors and should consult the Guidelines for Course Selection available from each department.

_Joint Major in French, History and Politics_

Steering Committee
M. Covell, Political Science
G. Merler, French
C.R. Day, History
The joint major 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 and for the civil and diplomatic services. It is offered by the Departments of French, History and Political Science and is organized into three main themes: the French-speaking peoples of Canada, France and Europe, and the French-speaking peoples of the world. Students are not confined to any one theme; they may take 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 to the program is frequently obvious, e.g., courses dealing directly with France, French Canada, and the French language, but in cases where there is doubt as to sufficient French content in a course, the student should consult the steering committee representative in the appropriate department and review the Guidelines for Course Selection (contained in the information brochure relating to the joint major) which lists sample courses suitable for the program. The program is intended to be broad in nature: the emphasis is on the role played in the world by French language, literature, history and politics; hence the courses selected may represent a variety of interests and fields.

The attention of students is drawn to courses offered by the Canadian Studies program which might be of interest.

**Lower Division Requirements**

As prerequisites (43 semester hours)

- History courses 12 semester hours
- Political Science courses 12 semester hours
- French courses *16 semester hours
- Additional History or Political Science course 3 semester hours

Total 43 semester hours

*see below for possible exemptions for students who are already proficient in French.

**Upper Division Requirements**

(45 semester hours)

- History courses 15 semester hours
- Political Science courses 15 semester hours
- French courses (301-3, 360-3, or 370-3 and nine credits of 400 level courses) 15 semester hours

Total 45 semester hours

**History**

Students must take 12-15 semester hours of lower division History courses and at least 15 semester hours of upper division History. Students may choose courses in consultation with the departmental assistant of the Department of History or the History representative on the Program Steering Committee and, after reviewing the Guidelines for Course Selections, which offers a list of sample courses suitable to the program. Such choices must fit with the thematicity criteria of the joint major to the Steering Committee's satisfaction.

**Political Science**

Students must take 12-15 semester hours of lower division and at least 15 semester hours of upper division Political Science courses. Students may choose courses in consultation with the Departmental Assistant of Political Science or the representative of the Department of Political Science on the Program Steering Committee after reviewing the Guidelines for Course Selection. It is emphasized that such choices must fit in with the thematicity criteria of the joint major program to the satisfaction of the Steering Committee.
French Students must acquire an appropriate degree of proficiency in both oral and written French. In order to achieve this, a certain number of French language courses are required. Exemption from one or more French language courses can be obtained by gaining advanced placement through a placement test administered by the French Department. The course challenge procedure may also be used to fulfill lower division language requirements in part or in full.

Lower Division
At least 16 semester hours (or exemption) are required including the following.

all of
FREN 151-4 French I (or exemption)
FREN 201-3 Intermediate French I (or exemption)
FREN 202-3 Intermediate French II (or exemption)
FREN 206-3 Intermediate French III (or exemption)

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 140-3 French Civilization
FREN 205-1 French Conversation

Upper Division
FREN 301-3 Advanced French - Composition I

one of
FREN 360-3 Intermediate French - Literature
FREN 370-3 Introduction to French Linguistics II

Note: Students wishing to complement this joint major program specialization with greater competence in oral and written French may take FREN 300 and FREN 302 in addition to the above requirements.

At least nine semester hours must be chosen at the 400 level. Students may choose courses in consultation with the Departmental Assistant in the French Department or the representative of the French Department on the Program Steering Committee and after reviewing the Guidelines for Course Selection.

Joint Major in French and Spanish
The joint major in French and Spanish offers a framework for students interested in exploring the linguistic, literary and cultural affinities between the two areas of study. (See Spanish and Latin American Studies.)

Joint Extended Minor in French and Education
Please refer to the Education section for 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 and programs. A student must have their program approved by the advisor for the extended minor program.

Certificate in French Language Proficiency
Co-ordinator: P. Wrenn, 778.782.3676
Advisor: Ms. R. Gould, 778.782.4505
The program provides training in the French Language and is intended for school teachers wanting to improve oral and written proficiency in French, students, whether enrolled in a degree program or not, and the public at large wishing to enhance their knowledge of the language for cultural reasons or professional needs, and for all other persons interested in acquiring proficiency in French. The program is not intended for native speakers of French.

The program is offered by the French Department. Recommendations for the award of the certificate will be made by the department and the Faculty of Arts.

**Admission**
Normal admission regulations to Simon Fraser University will apply.

**Requirements**
Students must successfully complete 29 semester hours, of which 20 hours are earned by completing seven required courses. The remaining nine semester hours may be selected from any other French courses, excluding FREN 100, 101, 198, 298, and 140.

*a of*
- FREN 151-4 French I
- FREN 201-3 Intermediate French I
- FREN 202-3 Intermediate French II
- FREN 205-1 French Conversation
- FREN 206-3 Intermediate French III
- FREN 301-3 Advanced French - Composition I

*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 - Conversation
- FREN 302-3 Advanced French - Composition II

The program will normally take five to six semesters to complete.

**Note:** It is possible to obtain exemption, up to a maximum of 13 semester hours, from lower division French language courses by advance placement, obtained by demonstrating equivalent preparation to the French Department's satisfaction. Exempted courses must be replaced with credit obtained by

- approved transfer credit for French courses taken at another post-secondary institution (subject to University regulations governing the approval of transfer credit), up to a maximum of six semester hours

*or*

- challenge credit for exempted courses (subject to University regulations governing approval of challenge credit), up to a maximum of six hours

*and/or*

- successful completion of other French courses at Simon Fraser University, excluding FREN 100, 101, 198, 298 and 140.

Students who gain, or hope to gain, exemption should consult the Program Co-ordinator or the Departmental Assistant early in their program.
In accordance with the University rules governing certificate programs (see the General Information section), the credits accumulated towards the certificate program may be applied also to major programs or extended minor programs or to a Bachelors degree at the University.

**French Undergraduate Courses**

*Faculty of Arts*

FREN 100-3 Introductory French I  
This course is designed for students with between one and three years of high school French. The course covers basic French structures, vocabulary and patterns of pronunciation. Communicative skills will be emphasized throughout. (Tutorial/Laboratory)  
May not be taken by students with grade 11 or 12 French, French Immersion, Programme Cadre or IB, nor those who have completed any French courses at Simon Fraser University or in another university/college.

FREN 101-3 Introductory French II  
Continuation of the work of FREN 100-3. It should be taken, wherever possible, in the semester immediately following FREN 100-3. (Tutorial/Laboratory) Prerequisite: Grade 11 French or FREN 100, or equivalent. May not be taken by students with credit for FREN 151 and/or subsequent courses.

FREN 140-3 French Civilization  
This course is a multifaceted approach to the sociocultural background of France today. Classes will be given in English. (Lecture/Tutorial)

FREN 151-4 French I  
Designed for students with prior knowledge of the language but who need further training in written and oral fluency before proceeding to higher-level courses. (Tutorial/Laboratory) Prerequisite: Grade 12 French/FREN 101-3. May not be taken by students from French Immersion, Programme Cadre or IB, nor those who have taken subsequent language courses (FREN 201-299).

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 who have completed a French program through grade 12 or by students who have received credit for FREN 151 or its equivalent or higher. (Lecture/Tutorial) May not be taken by students with French 12 or with French 151 or higher (or their equivalents).

FREN 199-3 Writing French I: Spelling and Grammar  
An alternative to FREN 201-3 for francophone students who need practice in elementary grammar, composition and spelling. Offered as a correspondence course only. Prerequisite: Fluency in French. Students will be accepted only after an interview (which may be by telephone) with a faculty member in the Department of French. Students may not get credit for both FREN 201 and 199.

FREN 201-3 Intermediate French I  
Further development of the language skills of speaking, understanding and reading. (Tutorial/Laboratory) Prerequisite: Grade 12 French with a grade of A or FREN 151. May not be taken by students with credit for FREN 216-3 or 199-3 or subsequent language courses (FREN 202 and up).

FREN 202-3 Intermediate French II  
Training in the techniques of self-expression in writing French. (Lecture/Tutorial) Prerequisite: FREN 199 or 201 or 216. FREN 201 and 202 may be taken concurrently after completion of FREN 151 with a grade of A- or better.

FREN 205-1 French Conversation  
An intermediate conversation course aimed at the level of students taking FREN 202. (Tutorial) Prerequisite: FREN 201 or 202 or 216. May not be taken by students with credit for FREN 300.
FREN 206-3 Intermediate French III
Study in depth of the structure of French and extension of competence in the skills of oral and written expression.
(Lecture/Tutorial) Prerequisite: FREN 202.

FREN 216-3 French for Immersion Program Students
A course designed to answer the specific needs of French Immersion Program graduates. Emphasis will be placed upon the development of self-monitoring techniques to improve correctness in the use of the oral and written codes of French.
(Lecture/Tutorial) Prerequisites: restricted to students entering Simon Fraser University from high school French Immersion programs. Prior permission of Course chair is required. May be taken in conjunction with other French language courses. May not be taken as part of the French Certificate program. May not be taken by students with credits for FREN 201.

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. (Lecture/Tutorial) Prerequisite: any one of FREN 202, 206, 270, 299 or 301.

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. (Lecture/Tutorial) Prerequisite: any one of FREN 202, 206, 270, 299 or 301.

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. (Lecture/Tutorial) Prerequisite: any one of FREN 202, 206 or 301. Students with credit for FREN 306 may not take this course for further credit.

FREN 298-3 French for Reading Knowledge II
For graduate and undergraduate students wishing to improve their facility in reading a range of literary, scientific, scholarly and discipline-related material. May not be taken for credit by students with French 202 or higher (or their equivalents). (Lecture/Tutorial) May not be taken for credit by students with French 202 or higher (or their equivalents). Successful completion of this course with a minimum grade of B may be accepted as fulfilling second language reading requirements in a number of undergraduate and graduate programs in the university. Students are advised to check with their graduate or their major departments.

FREN 299-3 Writing French II: Intermediate Composition
An intermediate composition course to help students with the techniques of writing essays in French, both at the grammar level and at the composition level. (Distance education) Prerequisite: FREN 199 with C+ minimum or 202. May be taken concurrently with other French courses at the 200 or 300 level except by students who are taking or have completed FREN 301. Does not count towards the requirements for French minor, major, honors or certificate programs.

FREN 300-3 Advanced French - Conversation
Free conversation; discussion of selected topics. (Tutorial) Prerequisite: any one of FREN 202, 205, 206, 270 or 299.

FREN 301-3 Advanced French - Composition I
Emphasis is placed on written command of French. Detailed study of syntax. (Lecture/Tutorial) Prerequisite: any one of FREN 206, 230, 240 or 270. Students with a grade of A- or above in FREN 202 may request permission of the course chair of FREN 301 to enroll directly in FREN 301 and, if accepted and if they so desire, to thereby register to challenge 206.

FREN 302-3 Advanced French - Composition II
Further practice in written expression by means of composition. (Lecture/Tutorial) Prerequisite: FREN 301.

FREN 310-3 Linguistics and French Language Learning
This course is intended for students who may be contemplating a career as French language teachers of core French or French immersion. The course studies the contributions of various branches of linguistics to the problems of second-language acquisition and to the teaching of French as a second language. Prerequisites: FREN 301 and 370 or 306 (or permission of the course chair). Students who have taken FREN 303 may not take this course for further credit. The course is a required course for the French and
Education joint minor. For students not following this joint minor, the credits may be used in partial fulfillment of the upper division requirements for honors, majors and minors in French in a Bachelor of Education program, and for honors and majors in French in a Bachelor of Arts program. This course counts toward a minor in a Bachelor of General Studies program.

FREN 311-3 The Acquisition of Vocabulary
This course is intended for students who may be contemplating a career as French language teachers of core French or French Immersion. The course addresses the practical problems of acquiring the specialized vocabularies needed to teach French as a second language and to teach other school subjects in French. It also studies the techniques by which students may be taught to increase their vocabularies. Prerequisites: FREN 301 and 370 or 306. The course is required for the French and Education joint minor. For students not following this joint minor, the credits may be used as upper division elective credit but may not be counted towards the 15 upper division credits required for a minor in French nor towards the 30/50 upper division credits required for a major/honors in French.

FREN 312-3 Corrective Phonetics
This course is intended for students who may be contemplating a career as French language teachers of core French or French immersion. The course is designed to help them to improve their own pronunciation of French; it also provides them with the knowledge and techniques needed to address the pronunciation problems of students in their language classes. Prerequisites: FREN 206 and 270 or 306. The course is required for the French and Education joint minor. For students not following this joint minor, the credits may be used as upper division elective credit but may not be counted towards the 15 upper division credits required for a minor in French nor towards the 30/50 upper division credits required for a major/honors in French.

FREN 341-4 French-Canadian Literature in Translation
A study of representative and significant works from French-Canadian literature and cinema in their socio-cultural context. (Lecture/Tutorial) Knowledge of French is not required. Prerequisite: two courses in literature. This course does not count towards the degree requirements for a minor, major or honors in French. With permission of the English Department, 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 17th to the 19th centuries. (Lecture/Tutorial) 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. (Lecture/Tutorial) Prerequisite: FREN 270. Students with credit for FREN 306 may not take this course for further credit.

FREN 406-3 French Stylistics
Introduction to the application of basic linguistic concepts to the study of French literature. (Lecture/Tutorial) Prerequisites: FREN 301, 370 or 306, and 360.

FREN 407-4 History of French: Phonology
The study of the evolution of the phonological system of Modern French from Vulgar Latin. (Lecture/Tutorial) Prerequisites: FREN 301 and 306 or 370.

FREN 408-4 History of French: Morphology and Syntax
The study of the evolution of Modern French morphology and syntax from Vulgar Latin. (Lecture/Tutorial) Prerequisites: FREN 301 and 306 or 370.

FREN 411-4 Modern French: Morphology
The analysis of the morphological systems of Modern French. (Lecture/Tutorial) Prerequisites: FREN 301 and 306 or 370.

FREN 412-4 Modern French: Syntax
Theoretical approaches to specific grammatical problems. (Lecture/Tutorial) Prerequisites: FREN 301 and 306 or 370.
FREN 413-4 Modern French: Phonology
Analysis of the sound system of modern French. (Lecture/Tutorial) Prerequisites: FREN 301 and 306 or 370. LING 130 highly recommended.

FREN 414-3 French Linguistic Theories
Studies in French linguistic theories. (Lecture/Tutorial) Prerequisites: FREN 301 and 306 or 370.

FREN 420-3 French Semantics and Lexicology
Study of diachronic and synchronic organization of semantic and lexical fields. Formation and evolution of French vocabulary. (Lecture/Tutorial) Prerequisites: FREN 301 and 306 or 370.

FREN 421-3 Varieties of French
Studies in French dialectology and varieties of French in the French speaking world. (Lecture/Tutorial) Prerequisites: FREN 301 and 306 or 370. FREN 407 and/or 408 are recommended.

FREN 422-3 Canadian French
Description of Canadian French with special emphasis on its dialects. (Lecture/Tutorial) Prerequisites: FREN 301 and 306 or 370. FREN 421 is recommended.

FREN 430-3 The French-Canadian Novel and Theatre
Prerequisites: FREN 230 or 240; and FREN 360. (Lecture/Tutorial)

FREN 431-3 French-Canadian Poetry
Prerequisites: FREN 230 or 240; and FREN 360. (Lecture/Tutorial)

FREN 460-4 Introduction to Medieval and Renaissance Texts
Prerequisites: FREN 230 or 240; and FREN 360. (Lecture/Tutorial)

FREN 463-4 Literature of the Seventeenth Century
Prerequisites: FREN 230 or 240; and FREN 360. (Lecture/Tutorial)

FREN 465-4 Literature of the Eighteenth Century
Prerequisites: FREN 230 or 240; and FREN 360. (Lecture/Tutorial)

FREN 470-4 Realism to Naturalism
Prerequisites: FREN 230 or 240; and FREN 360. (Lecture/Tutorial)

FREN 472-3 The Contemporary Theatre
Prerequisites: FREN 230 or 240; and FREN 360. (Lecture/Tutorial)

FREN 474-3 French Poetry
Prerequisites: FREN 230 or 240; and FREN 360. (Lecture/Tutorial)

FREN 475-3 The Contemporary Novel
Prerequisites: FREN 230 or 240; and FREN 360. (Lecture/Tutorial)

FREN 480-2 Seminar I
Study in depth of an area covered by a French Literature or Linguistics course in the 400 division. (Tutorial) Prerequisites: 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 490-3 Linguistics and Literary Criticism
Application of linguistic theories to the interpretation of literary texts. Prerequisites: FREN 306 or 370 and 360. (Lecture/Tutorial) Upper division courses in French Literature and Linguistics recommended before taking this course.

FREN 491-3 Readings in French Linguistics and/or Literary Criticism
Guided readings in selected topics. May only be taken during the last semesters of study; required as a preparation for the Honors Essay but may be taken by other students with consent of the instructor. Students with credit for FREN 409 may not take this course for further credit.

FREN 492-3 Honors Essay
Topic of a comprehensive nature in literature or linguistics to be approved by the Course Chair. (Seminar) Prerequisites: FREN 491 and at least nine 400 division courses in French Literature and/or French Linguistics.

Division of Interdisciplinary Studies
Location: 6180 Academic Quadrangle
Telephone: 778.782.4509

Professor Emeritus
R.J.C. Harper MA (St And), MA, PhD (Edin), FRSA

Associate Professors
M.B. Jackson DrPhil (MŸnster)
L.P. Kitching BA, MA (Br Col), PhD (Indiana)

Assistant Professors
T. Kawasaki LLB (Doshisha), MA (Tor), MA, PhD (Prin)*
T. Yu BA (Hong Kong), MA, PhD (Br Col)**

Lecturer
N. Omae BA, MA (Osaka), MPhil (Exeter)

*joint appointment with Political Science
** joint appointment with Humanities

The Division of Interdisciplinary Studies offers courses which are outside the disciplinary boundaries of departments in the Faculty of Arts. In addition to a variety of General Studies courses (GS), the division offers courses in a number of languages:

Chinese (CHIN)
German (GERM)
Italian (ITAL)
Japanese (JAPN)
Russian (RUSS).
General Studies Undergraduate Courses

Faculty of Arts

Division of Interdisciplinary Studies

Note: General Studies courses will be offered on an irregular basis. Students wishing to enroll in these courses should consult the Course Timetable and Registration Instructions.

GS 106-3 Opera
This course is designed to provide a broad general knowledge of opera and the history of opera. Attention also will focus on how voices are used in opera, and the way in which operas are presented and performed. The course does not assume prior knowledge of, or competence in, music. (Lecture)

GS 201-3 Introduction to Chinese Culture and History
The course provides the student with an introduction to historical and cultural perspectives on contemporary China. Part of the course is offered at Simon Fraser University as an orientation for students before their departure for China and the remainder at a university in China. Topics covered will include the background to current government and politics in China, the Chinese educational system, current economic and political reforms, China's international relations, the role of art in Chinese culture, and contemporary social conditions in China. (Lecture/Tutorial) Prerequisite: 30 semester hours.

GS 240-3 Introduction to German Literature (in German)
A discussion of selected German Literary Texts (Seminar) Prerequisite: GERM 202 or consent of instructor.

GS 242-3 Introduction to German Literature (in English Translation)
A discussion of selected German literary texts in English translation (Lecture/Tutorial) Students with credit for GERM 240 cannot take this course for further credit.

GS 251-3 Studies in Chinese Culture
An introduction to Chinese art, literature or philosophy. The emphasis will be on the cultural importance of the subject covered and on its relationship to contemporary Chinese society. Prerequisite: 15 semester hours.

GS 304-3 Richard Wagner: The Ring of the Nibelung
An interdisciplinary study of Wagner's monumental series of music dramas collectively known as The Ring of Nibelung. The aim of this course is to examine Wagner's ideas on music, drama, ethics, politics, aesthetics, religion, history, psychology, mythology, and metaphysics as they are reflected in and manifested by The Ring of the Nibelung. (Lecture/Seminar) Prerequisite: 45 semester hours.

GS 311-3 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. This course will be taught in China and contact with and observation of the setting in China will be an important aspect of the course. (Seminar) Prerequisite: 30 semester hours.

GS 341-3 Selected Topics in German Studies
An advanced course exploring in greater depth a particular area in German Studies. (Seminar) Prerequisite: consent of the instructor.

GS 350-3 Family Development I: Coupling and Young Families
This course is the first of a sequence of two courses designed to encourage the study of families from an interdisciplinary point of view and as such it provides the foundation for further study of family development. Information from various disciplines is integrated to provide an overview of the initial development of families starting with coupling and concluding with the young family. (Seminar) Prerequisites: PSYC 100 and 102.
GS 351-3 Family Development II: Maturing and Extended Families  
This is the second of two interdisciplinary courses in family development and is designed as a sequel to Family Development I.  
In this course, information from various disciplines is integrated to provide a comprehensive knowledge of maturing and extended families. (Seminar) Prerequisites: PSYC 100 and 102. Recommended: GS 350.

GS 399-3/400-5 Individual Study Project  
An intensive study project of the student's own selection. Prerequisites: completion of 75 semester hours of undergraduate work; completion of at least one upper division course in relevant areas; the signature of a faculty member who is willing to supervise the project; permission of the Dean to enroll.  
Note: These courses may be used once only for credit towards a degree.

GS 410-3 Selected Topics  
The subject matter will vary from semester to semester depending upon the interests of faculty and students. Prerequisite: 45 semester hours.

GS 411-5 Selected Topics  
The subject matter will vary from semester to semester depending upon the interests of faculty and students. Prerequisite: 45 semester hours.

GS 498-10 Individual Study Project  
An intensive study project of the student's own selection. (Directed Study)  
Prerequisites:

- completion of 75 semester hours of undergraduate work;
- completion of at least two upper division courses in a relevant area;
- the signature of two faculty members who are willing to provide supervision and other support necessary to the completion of the project; the supporting faculty should be from two different disciplines;
- students must apply to the Dean for admission at least two months prior to the beginning of the semester in which they wish to enroll.

Note: Students who have completed an individual study semester course for at least 10 semester hours of credit (e.g. GS 499-15, CMNS 498-16, 499-15) may not take this course for further credit towards a degree in the Faculty of Arts or for the degree Bachelor of General Studies.

GS 499-15 Individual Study Semester  
A full semester spent on an intensive study project of the student's own selection.  
Prerequisites:

- completion of 75 semester hours of undergraduate work;
- completion of at least two upper division courses in relevant areas;
- the signature of three faculty members who are willing to provide supervision and other support necessary to the completion of the project. The supporting faculty should be from at least two separate disciplines;
- students must apply to the Dean for admission at least two months prior to the beginning of the semester in which they wish to enroll.

Note: Students who have completed an individual study semester course for at least 10 semester hours of credit (e.g. GS 498-10, CMNS 498-16, 499-15) may not take this course for further credit towards a degree in the Faculty of Arts or for the degree Bachelor of General Studies.
Chinese Undergraduate Courses

Faculty of Arts

Division of Interdisciplinary Studies

CHIN 100-4 Mandarin Chinese I
Introduction to the Pinyin romanization system, the basic speech sounds of mandarin, the Chinese writing system as well as the acquisition of some situational dialogues. (Lecture/Tutorial/Monitored Lab) Prerequisites: Students who can read or write Chinese or who speak Mandarin cannot register for this course.

CHIN 101-4 Mandarin Chinese II
Continues to build on all four language skills acquired in CHIN 100. (Lecture/Tutorial/Monitored Lab) Prerequisite: CHIN 100 or equivalent.

CHIN 102-4 Mandarin Chinese II (China)
Further acquisition of spoken fluency and elementary writing in Mandarin Chinese. This course will be taught at a university in China. (Lecture/Tutorial) Prerequisites: CHIN 100.

CHIN 151-3 Spoken Mandarin for Speakers of Other Chinese Dialects
This course is especially designed for native speakers of Chinese Dialects other than Mandarin who, though able to read and write Chinese fluently, have no knowledge of spoken Mandarin. (Lecture/Tutorial/Monitored Lab) Prerequisites: ability to read and write Chinese, ability to speak a dialect of Chinese other than Mandarin.

CHIN 201-3 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 (Lecture/Tutorial/Monitored Lab) Prerequisite: CHIN 101 or 102 or equivalent.

CHIN 202-3 Mandarin Chinese IV
Continues to build on all four skills of the language acquired in CHIN 201, with special emphasis on improving the students’ spoken facility in the language. (Lecture/Tutorial/Monitored Lab) Prerequisite: CHIN 201 or equivalent.

German Undergraduate Courses

Faculty of Arts

Division of Interdisciplinary Studies

Note: For further courses in German studies, see General Studies.

GERM 102-4 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. (Lecture/Tutorial/Laboratory)

GERM 103-4 Introductory German II
Continuation of the work of GERM 102-4 (formerly GERM 100-3); it should be taken wherever possible, in the semester immediately following GERM 102-4. (Lecture/Tutorial/Laboratory) Prerequisite: GERM 102 (formerly 100), or the consent of instructor.

GERM 141-3 Introduction to German Civilization
An introductory course exploring the cultures of German-speaking peoples. (Lecture/Tutorial)
GERM 201-3 Intermediate German I
Emphasis on oral command, accurate and idiomatic expression; reading of intermediate texts. (Lecture/Tutorial) Prerequisites: GERM 102 (formerly 100) and 103 (formerly 101) or consent of instructor.

GERM 202-3 Intermediate German II
This course continues the work of GERM 201-3. Considerable emphasis will be placed on reading facility as well as oral and written command of the language. (Lecture/Tutorial) Prerequisite: GERM 201 or consent of instructor.

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 (Seminar) Prerequisite: GERM 202-3 or consent of the instructor.

Italian Undergraduate Courses

Faculty of Arts

Division of Interdisciplinary Studies

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. (Tutorial/Laboratory)

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. (Tutorial/Laboratory) Prerequisite: ITAL 100.

Japanese Undergraduate Courses

Faculty of Arts

Division of Interdisciplinary Studies

JAPN 100-3 Introduction to Japanese I
Acquisition of basic fluency in speech and introduction to the three writing systems. (Lecture/Tutorial)

JAPN 101-3 Introduction to Japanese II
Continues the work of JAPN 100. (Lecture/Tutorial) Prerequisite: JAPN 100 or equivalent.

JAPN 250-3 Conversation and Composition
Conversation and composition on selected topics with emphasis on intermediate reading and basic writing skills. (Lecture/Tutorial) Prerequisite: JAPN 101 or equivalent.
Russian Undergraduate Courses

Faculty of Arts

Division of Interdisciplinary Studies

RUSS 100-3 Introductory Russian I
Acquisition of reading facility and basic ability in speaking and understanding. For all students who have not previously taken Russian. (Lecture/Tutorial)

RUSS 101-3 Introductory Russian II
Continuation of work of RUSS 100-3 (formerly 102-3); it should be taken in the semester immediately following RUSS 100-3. (Lecture/Tutorial) Prerequisite: RUSS 100 or equivalent.

RUSS 201-3 Intermediate Russian I
Emphasis on oral command, accurate and idiomatic expression. (Lecture/Tutorial) Prerequisite: RUSS 101.

RUSS 202-3 Intermediate Russian II
This course continues the work of RUSS 201-3. Considerable emphasis will be placed on reading facility as well as oral and written command of the language. (Lecture/Tutorial) Prerequisite: RUSS 201.

Department of Geography
Location: 7123 Classroom Complex
Telephone: 778.782.3321
Chair: J.T. Pierce BA (Tor), MA (Wat), PhD (Lond)

Professors Emeriti
C.B. Crampton BSc, PhD (Brist)
F.F. Cunningham BA, MA, DipEd (Durh), FRGS
A. MacPherson MA (Edin), FRMetS
P.L. Wagner AB, MA, PhD (Calif)
J.W. Wilson BSc (Glas), MSc (MIT), MPP (N Carolina)

Professors
W.G. Bailey BSc (Tor), PhD (McM)
R. Hayter BA (N'cle UK), MA (Alta), PhD (Wash)
E.J. Hickin BA, PhD (Syd), PGeo
J.T. Pierce BA (Tor), MA (Wat), PhD (Lond), Chair of Department
T.K. Poiker PhD (Heidel)
M.C. Roberts BSc (Lond), MA (Tor), PhD (Iowa), PGeo
S.T. Wong AB (Augustana, Ill), AM (Yale), PhD (Chic)

Associate Professors
R.C. Brown BS, MS (Oregon State), PhD (Mich State)
L.J. Evenden BA (McM), MA (Georgia), PhD (Edin)
E.M. Gibson BA, MA (W Ont), PhD (Br Col)
A.M. Gill BA (Hull), MA (Alta), PhD (Manit)
M.V. Hayes BA, MSc, PhD (McM)
I. Hutchinson BA (Liv), MScB (McG), PhD (S Fraser)
P.M. Koroscil BA, MA, PhD (Mich)
A.C.B. Roberts BA (Tor), MA (Wat), PhD (York)

Assistant Professors
N.K. Blomley BSc, PhD (Brist)
J.A.C. Brohman BA (Car), MA, PhD (Calif)
The Department of Geography offers a program of study within the Faculty of Arts leading to the degree of Bachelor of Arts with honors, major or minor standing in Geography. Students interested in a Bachelor of Science degree in Geography should refer to the Faculty of Science section.

Undergraduate courses
Course descriptions for all Geography undergraduate courses.

BA Major Program
Students should check that they have fulfilled the requirements of the Faculty of Arts as detailed in the Faculty of Arts section.

Transfer students may enter the Geography program without having fulfilled all lower division requirements. See the department academic advisor as soon as possible about entering the program.

Supporting Courses Outside Geography
Students will profit greatly by selecting a wide range of subjects outside geography. Economics, Sociology and Anthropology, Political Science, History, and many areas in the Faculty of Science can be of great value to the prospective geographer. Students may wish to complete a minor in one of these fields. Any Geography faculty member will be pleased to advise.

Students with credit or claiming advanced standing in Geography should consult an undergraduate advisor in the department concerning the structure of their programs.

Lower Division Requirements
Students must complete
GEOG 100-3 Human Geography
GEOG 111-3 Physical Geography (6 semester hours)

Students must also complete one 200 level course from section A (see below), both GEOG 221 and 241 from section B, and one course from section C.

(12 semester hours)

Section A - Physical Geography
GEOG 111-3 Physical Geography
GEOG 112-3 Introductory Geology
GEOG 213-3 Geomorphology I
GEOG 214-3 Climatology I
GEOG 215-3 Biogeography

Section B - Human Geography
GEOG 100-3 Human Geography
GEOG 102-3 World Problems in Geographic Perspective
GEOG 212-3 Geography of Natural Hazards
GEOG 221-3 Economic Geography
GEOG 241-3 Social Geography
GEOG 264-3 Canadian Cities
GEOG 261-3 Introduction to Urban Geography

Section C - Techniques and Special Requirements
GEOG 250-3 Cartography I
GEOG 251-3 Methods in Spatial Analysis
GEOG 253-3 Aerial Photographic Interpretation

Section D - Regions
GEOG 162-3 Canada
GEOG 263-3 Selected Regions
GEOG 265-3 Geography of British Columbia

Upper Division Requirements
Students are expected to consult with a departmental undergraduate advisor when they formally declare a major in Geography. Those who do not seek advice from the department run a risk of prolonging their programs.

Students must complete 20 semester hours of 300 level courses, including at least one course from section A (see below) as well as

GEOG 301-4 Geographic Ideas and Methodology

(20 semester hours)

Additionally, 12 semester hours of 400 level courses must be completed, including at least one course from section D (see below)

(12 semester hours)

Total 32 semester hours

Section A - Physical Geography
GEOG 311-4 Hydrology I
GEOG 313-4 Geomorphology II
GEOG 314-4 Climatology II
GEOG 315-4 Regional Ecosystems
GEOG 316-4 Ecosystem Biogeochemistry
GEOG 317-4 Soil Science
GEOG 411-4 Hydrology II
GEOG 412-4 Quaternary Geology and Geomorphology
GEOG 413-4 Geomorphology III
GEOG 414-4 Climatology III
GEOG 415-4 Advanced Biogeography
GEOG 416-4 Pleistocene Geography
GEOG 417-4 Soil Science II
GEOG 418-4 Land Evaluation
GEOG 419-4 Mass Transfer in the Biosphere

Section B - Human Geography
GEOG 301-4 Geographic Ideas and Methodology
GEOG 322-4 World Resources
GEOG 323-4 Geography of Manufacturing
GEOG 324-4 Geography of Transportation
GEOG 325-4 Geography of Service Activities
GEOG 327-4 Geography of Tourism and Outdoor Recreation
GEOG 344-4 Geography of Modern Industrial Societies
GEOG 362-4 Geography of Urban Development
GEOG 369-4 Human Microgeography
GEOG 375-4 Historical Geography I
GEOG 381-4 Political Geography
GEOG 382-4 Population Geography
GEOG 383-4 Regional Development and Planning I
GEOG 386-4 Medical Geography
GEOG 387-4 Geography and Gender
GEOG 420-4 Comparative Cultural Geography
GEOG 421-4 Geography of Resource Development
GEOG 422-4 Geography of the Third World
GEOG 424-4 Urban Transportation
GEOG 426-4 Multinational Corporations and Regional Development
GEOG 427-4 Selected Topics in the Geography of Tourism
GEOG 441-4 Geography of Urban Regions
GEOG 444-4 Regional Development and Planning II
GEOG 445-4 Resource Planning
GEOG 446-4 Geography of Contemporary Societies
GEOG 447-4 Critical Methods for Urban Analysis
GEOG 448-4 Public Policy, Theory and Human Geography
GEOG 449-4 Environmental Processes and Urban Development
GEOG 475-4 Historical Geography II

Section C - Techniques and Special Requirements
GEOG 351-4 Cartography II
GEOG 352-4 Methods in Spatial Analysis II
GEOG 353-4 Remote Sensing
GEOG 354-4 Introduction to Geographic Information Systems
GEOG 355-4 Technical Issues in Geographic Information Systems
GEOG 356-4 Cognitive Cartography
GEOG 359-2 Methods in Human Geography
GEOG 404-2 Directed Readings
GEOG 405-4 Directed Readings
GEOG 452-4 Advanced Issues in Geographic Information Systems
GEOG 453-4 Digital Image Processing
GEOG 490-4 Selected Topics
GEOG 491-4 Honors Essay
GEOG 498-4 Field Studies

Section D - Regions
GEOG 460-4 Selected Regions
GEOG 462-4 Canada and the United States
GEOG 466-4 Latin American Regional Development
GEOG 469-4 Canadian North and Middle North
GEOG 470-4 The Geography of Western Canada

**BA Honors Program**
Students are expected to consult with a departmental undergraduate advisor when they formally declare an honors in Geography. Those who do not seek advice from the department run a risk of prolonging their programs.

Students must complete all the requirements for the major program (see above) plus 14 additional semester hours from courses in the 300 and 400 level listings and the following course.
GEOG 491-4 Honors Essay (18 semester hours)

Total 50 semester hours

**BA Minor Program**
Students are expected to consult with a departmental undergraduate advisor when they formally declare minor in Geography. Those who do not seek advice from the department run a risk of prolonging their programs.

*Students must complete*
GEOG 100-3 Human Geography
GEOG 111-3 Physical Geography

*and one of*
GEOG 221-3 Economic Geography
GEOG 241-3 Social Geography

*and one of*
GEOG 250-3 Cartography I
GEOG 251-3 Methods in Spatial Analysis
GEOG 253-3 Aerial Photographic Interpretation (12 semester hours)

Students must also complete 16 semester hours in GEOG courses numbered 300 and 400. (16 semester hours)

Total 28 semester hours

**Languages Other Than English**
Some graduate schools require some proficiency in a language other than English. Those who contemplate graduate studies in Geography are advised to include courses in languages other than English in their programs.

**Joint Major in Geography and Business Administration**
Please refer to the Faculty of Business Administration section for requirements.

**Joint Major in Geography and Latin American Studies**
Please refer to the Department of Spanish and Latin American Studies section for 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 and programs. A student must have their program approved by the advisor for the extended minor program.

**Certificate in Spatial Information Systems**
To qualify for the certificate, students must complete the following courses (or their equivalents from another department or institution).

*one of*
GEOG 251-3 Methods in Spatial Analysis
STAT 101-3 Introduction to Statistics, Option A
STAT 103-3 Introduction to Statistics for Social Sciences
STAT 270-3 Introduction to Probability and Statistics

all of
GEOG 250-3 Cartography II
GEOG 253-3 Aerial photographic interpretation
GEOG 352-4 Methods in spatial analysis II
GEOG 353-4 Remote sensing
GEOG 354-4 Introduction to Geographic Information Systems

three of
GEOG 351-4 Cartography II
GEOG 355-4 Technical Issues in Geographic Information Systems
GEOG 452-4 Advanced Issues in Geographic Information Systems
GEOG 453-4 Digital Image Processing

Under special circumstances, students may substitute, from approved courses, up to eight of the above 12 credits to satisfy this requirement.

Certificate in Urban Studies
This certificate encourages and facilitates the study of the nature and functions of the contemporary city from an interdisciplinary perspective of geography, political science, sociology and anthropology and is available to undergraduate students who wish to have a concentration in the area of urban studies.

Completion of the program is possible in one year but additional semesters may be required. The certificate is especially suitable for those students contemplating careers in urban planning, governance, consulting and/or who wish to participate in the Faculty of Arts Co-operative Education program.

Admission Requirements
Normal requirements for admission to Simon Fraser University apply. Students must complete GEOG 100 and POL 151 and/or POL 100 prior to formal admission to the certificate program.

Course Requirements
Successful completion of eight courses for a total of 27/29 credit hours including the following required courses.

GEOG 261-3 Introduction to Urban Geography
POL 252-3 Introduction to Local and Urban Government and Politics
SA 201-4 Anthropology of Modern Life

and at least two of the following four courses
GEOG 325-4 Geography of Service Activities
GEOG 362-4 Geography of Urban Development
* POL 354-3 Comparative Metropolitan Governance
SA 364-4 Urban Communities and Cultures

and at least one of the following two courses
GEOG 264-3 Canadian Cities
POL 352-3 Canadian Local and Urban Government and Politics

and at least one of the following two courses (the steering committee may from time to time designate other courses)
GEOG 241-3 Social Geography
SA 202-4 Post-Industrial Society

and one more course from the above list for a total of eight courses.
Post Baccalaureate Diploma in Urban Studies

This program, administered by the Department of Geography, provides an opportunity for individuals who have previously completed a Bachelors degree, or equivalent, to expand knowledge in theoretical and descriptive terms of the nature and functions of cities in contemporary society. The program emphasizes an holistic view of contemporary metropolises in which geographic, social, political, environmental, economic and cultural perspectives are explored.

Program completion normally requires two years and is of special interest to those who wish to develop careers in the urban setting, professionals who seek mid-career advancement in urban planning, consulting and related professions, and those who desire a better understanding of the contemporary metropolis. This Post Baccalaureate Diploma is offered through the Departments of Geography, Political Science and Sociology and Anthropology.

Course Requirements

Students must have a GPA of 2.5 for admission to the program and must successfully complete eight courses totalling at least 30 credit hours, of which 14/16 hours will be completed at the third year level and 14/16 credit hours at the fourth year. Completion is expected within five years of program admission. Students must maintain a GPA of 2.5 on courses used for the diploma.

All students must take a non-credit workshop composed of seminars and panel discussions regarding relationships between urban development and the social sciences. Participants will include practising professionals and faculty.

Students must complete the following.

at least four of
- GEOG 325-4 Geography of Service Activities
- GEOG 344-4 Geography of Modern Industrial Societies
- GEOG 362-4 Geography of Urban Development
- POL 352-3 Canadian Local and Urban Government and Politics
- POL 354-3 Comparative Metropolitan Governance
- SA 364-4 Urban Communities and Cultures

at least four of
- GEOG 424-4 Urban Transportation
- GEOG 441-4 Geography of Urban Regions
- GEOG 447-4 Critical Methods of Urban Analysis
- GEOG 448-4 Public Policy, Theory and Human Geography
- GEOG 449-4 Environmental Processes and Urban Development
- POL 458-3 Selected Topics in Local and Urban Government and Politics
- POL 454-3 Urban Public Policy Making

Co-operative Education Program

The Department of Geography offers a Co-operative Education program for students who wish to acquire practical experience. The program entails planned semesters of study and employment in an area of the student's choice.

Requirements

To be admitted into the Co-operative Education Program, students must have completed 28 semester hours with a minimum cumulative grade point average of 2.75. Prior to admission, students must complete the following.

- GEOG 100-3 Human Geography
- GEOG 111-3 Physical Geography
- GEOG 221-3 Economic Geography
- GEOG 241-3 Social Geography

one of
- GEOG 213-3 Geomorphology I
- GEOG 214-3 Climatology I
- GEOG 215-3 Biogeography
and one of
GEOG 250-3 Cartography I
GEOG 251-3 Methods in Spatial Analysis
GEOG 253-3 Aerial Photographic Interpretation

College transfer students must complete at least 15 semester hours at Simon Fraser University before becoming eligible for admission to the Co-op Program. They also must satisfy the requirements above or their equivalents.

College transfer students who have participated in co-op programs elsewhere may be credited with the semester(s) already taken. The applicability of such semesters depends on the evaluation of the Department of Geography.

Arrangements for the work semesters are made through the department's Co-op Co-ordinating Committee and the Faculty of Arts Co-op Co-ordinator.

To continue in the Co-operative Education Program, students must maintain a minimum cumulative grade point average of 2.75 in the course work.

For further details, refer to the Co-operative Education section. Interested students should contact the Department of Geography for further information.

Geography Undergraduate Courses

Faculty of Arts

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. Students with credit for GEOG 101, 121 or 141 may not take this course for further credit.

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. (Lecture/Tutorial)

GEOG 111-3 Physical Geography
An introduction to landforms, climates, soils and vegetation; their origins, distributions, inter-relationships and roles in the ecosystem. Laboratory work and field trips are included. (Lecture/Laboratory)

GEOG 162-3 Canada
The geographical character of Canada; the Canadian environment, regional differences in socio-economic growth. (Lecture/Tutorial) Students with credit for GEOG 262 may not take this course for further credit.

GEOG 212-3 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. (Lecture/Tutorial) Prerequisite: GEOG 111 or 112. Students who completed GEOG 312 prior to Fall 1988 may not take this course for further credit.

GEOG 213-3 Geomorphology I
An examination of landforms, processes, laws, and theories of development; types and distributions. (Lecture/Laboratory) Prerequisite: GEOG 111 or 112 Students who completed GEOG 313 prior to Fall 1988 may not take this course for further credit.

GEOG 214-3 Climatology I
A review of the basic principles and processes involved in physical and dynamic climatology, with particular emphasis on global distributions and change. (Lecture/Laboratory) Prerequisite: GEOG 111. Students who completed GEOG 314 prior to Fall 1988 may not take this course for further credit.
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. (Lecture/Laboratory) Prerequisite: GEOG 111. Students who completed GEOG 315 prior to Fall 1988 may not take this course for further credit. 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. (Lecture/Tutorial) Prerequisite: GEOG 100. Students with credit for GEOG 121 may not take this course for further credit.

GEOG 241-3 Social Geography
Systematic consideration of the spatial and environmental bases of societies, in historical and cultural perspective. (Lecture/Tutorial) Prerequisite: GEOG 100. Students with credit for GEOG 141 may not take this course for further credit.

GEOG 250-3 Cartography I
An introduction to the interpretation of maps and air photographs. (Lecture/Laboratory) Prerequisites: GEOG 100 or 221 or 241 and 111.

GEOG 251-3 Methods in Spatial Analysis
A systematic introduction to the quantitative and theoretical approaches to the study of geography. (Lecture/Tutorial/Laboratory) Prerequisites: GEOG 100 or 221 or 241 and 111.

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. (Lecture/Laboratory) Prerequisites: GEOG 100 or 221 or 241 and 111.

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. (Lecture) Prerequisite: GEOG 100 or 102 or 30 credit hours. Students who have taken GEOG 361 cannot take this course for further credit.

GEOG 263-3 Selected Regions
A study of the geographical character of a major world region. (Lecture/Tutorial) Prerequisite: at least 9 credit hours. This course may not be counted more than once toward a degree.

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. (Lecture/Tutorial) 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. (Lecture/Tutorial) Prerequisite: at least 9 credit hours.

GEOG 301-4 Geographic Ideas and Methodology
A study of contemporary geographical concepts in historical perspective, the course will examine the traditional approaches to the subject matter of geography, giving particular attention to present day methodological debate and foci of interest. (Lecture/Seminar) Prerequisite: completion of 30 credit hours, including 15 in Geography.

GEOG 302-0 Geography Practicum I
This is the first semester of work experience in a co-operative education program available to students who plan to pursue a career in geography or related areas. Prerequisites: Normally 28 semester hours credit, of which at least 15 semester hours have been completed at Simon Fraser University, which have a minimum cumulative grade point average of 2.75 and which include
all 100 and 200 level required Geography major courses (18 credit hours) or permission of the departmental co-op co-ordinating committee. Students should apply to the Faculty of Arts co-op co-ordinator by the end of the third week of the preceding semester.

GEOG 303-0 Geography Practicum II
This is the second semester of work experience in the Geography Co-operative Education Program. Prerequisites: GEOG 302 and completion of 42 semester hours with a cumulative grade point average of 2.75. Students should apply to the Faculty of Arts co-op co-ordinator by the end of the third week of the preceding semester.

GEOG 311-4 Hydrology I
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.
(Lecture/Laboratory) Prerequisites: GEOG 111 and one of GEOG 213 or 214.

GEOG 313-4 Geomorphology II
Intermediate analysis in fluvial, glacial and coastal geomorphology with particular reference to British Columbia.
(Lecture/Laboratory) Prerequisite: GEOG 213 (formerly 313). Students who completed GEOG 313 prior to Fall 1988 may take this course for further credit. Students who completed GEOG 413 prior to Fall 1988 may not take this course for further credit.

GEOG 314-4 Climatology II
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. (Lecture/Laboratory) Prerequisite: GEOG 214 (formerly 314) or permission of instructor. MATH 151 and 152 or MATH 154 and 155 or MATH 157 and 158 are recommended. Students who completed GEOG 314 prior to Fall 1988 may take this course for further credit.

GEOG 315-4 Regional Ecosystems
Physical and biological characteristics of regional ecosystems; historical evolution of biomes, management of biotic resources.
(Lecture/Seminar) Prerequisite: GEOG 215 (formerly 315) or BISC 204. Students who completed GEOG 315 prior to Fall 1988 may take this course for further credit.

GEOG 316-4 Ecosystem Biogeochemistry
Introduction to the cycling of essential chemical elements through ecosystems. Interactions among biological, hydrologic, 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.
(Lecture/Laboratory) Prerequisite: GEOG 215 or BISC 204 or permission of the instructor.

GEOG 317-4 Soil Science I
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. (Lecture/Laboratory) Prerequisite: GEOG 111 and 213 or permission of the instructor.

GEOG 322-4 World Resources
An analysis of the use and development of natural resources from a geographic, economic and institutional perspective.
(Lecture/Tutorial) Prerequisites: at least 30 credit hours including GEOG 221.

GEOG 323-4 Geography of Manufacturing
Basic analyses of manufacturing location, linkages and flows, and the processes of decision-making, locational adaptation and adoption. Prerequisite: GEOG 221 (formerly 121).

GEOG 324-4 Geography of Transportation
An empirical and theoretical examination of the geographical aspects of transportation systems. (Lecture/Tutorial) Prerequisites: GEOG 221 (formerly 121) and GEOG 241 (formerly GEOG 141).
GEOG 325-4 Geography of Service Activities
Central place theory, marketing and retail location, urban economic base, land use models, and tourism. (Lecture/Tutorial) Prerequisite: GEOG 221 or 261.

GEOG 327-4 Geography of Tourism and Outdoor Recreation
Factors underlying the changing geography of tourism and outdoor recreation. Issues of demand, supply and impact are examined. (Lecture/Tutorial) Prerequisite: GEOG 221 or 241, or permission of the instructor.

GEOG 344-4 Geography of Modern Industrial Societies
The theme of this course is the effect upon modern urban morphology of certain ideas and institutions prevalent in Anglo-Saxon cultures between the late 18th and early 20th centuries. The origin, spread and differentiation of selected man-made landscape features are systematically reconstructed. (Lecture/Seminar) Prerequisite: GEOG 241 (formerly 141). GEOG 301 and courses in 19th century English literature and history are recommended.

GEOG 351-4 Cartography II
Cartographic processes and techniques with an emphasis on thematic cartography; photographic process; the computer as a cartographic tool. (Lecture/Laboratory) Prerequisite: GEOG 250 or 251.

GEOG 352-4 Methods in Spatial Analysis II
Quantitative techniques for the analysis of spatial data and patterns, including trend surface analysis, spatial interpolation methods, and applications of multivariate statistics in geographic analysis. (Lecture/Laboratory) Prerequisites: one of GEOG 251, STAT 101, 102, 103 or 270; GEOG 250 and 253.

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 and SPOT data. The relation of remote sensing information and Geographic Information Systems is discussed. Manual interpretation and computer analysis will be used. (Lecture/Laboratory) Prerequisite: GEOG 253 (formerly 353). Students who completed GEOG 353 prior to Fall 1988 may take this course for further credit. Students who completed GEOG 453 prior to Fall 1988 may not take this course for further credit.

GEOG 354-4 Introduction to Geographic Information Systems
This course gives a basic overview of GIS. The emphasis is on: the nature and characteristics of spatial data; a review of software and hardware for GIS; data structures and data base models; data capture and sources of data; GIS operations and basic functions; applications of GIS and GIS products. (Lecture/Laboratory) Prerequisite: GEOG 250 or 253, or permission of instructor. Students who completed GEOG 452 prior to Fall 1988 may not take this course for further credit.

GEOG 355-4 Technical Issues in Geographic Information Systems
This course emphasizes the technological side of GIS. The main issues are: GIS algorithms; data structures; advanced computational topics; error analysis in GIS. (Lecture/Laboratory) Prerequisite: GEOG 250 or 253, or permission of the instructor.

GEOG 356-4 Cognitive Cartography
Analyses the map-user interface, the basic perceptual and cognitive processes used by the map reader, and the principles of design and presentation which lead to effective map use. (Lecture/Seminar) Prerequisites: GEOG 250 or 253.

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. (Lecture/Tutorial) Prerequisite: at least 30 credit hours including either GEOG 241 or 261.

GEOG 369-4 Human Microgeography
An examination of human interaction with physical environment, focusing on the individual as the unit of analysis, with special emphasis upon designed environments. A series of field studies will be required of each student. (Lecture/Seminar) Prerequisite: GEOG 241 (formerly 141).
GEOG 375-4 Historical Geography I
Geographical factors in the settlement of Canada and the United States; the role of the frontier; and geographic factors in the changing nature of the perception of resources. (Lecture/Seminar) Prerequisite: GEOG 241 (formerly 141).

GEOG 381-4 Political Geography
Theoretical approaches to problems of the interactions of political decisions and power structures with territorial organization. (Lecture/Tutorial) Prerequisite: GEOG 241 (formerly 141).

GEOG 382-4 Population Geography
A study of the application of theories of population growth and demographic techniques; a consideration of the implications of these on the distribution and evolution of population in selected areas. (Lecture/Tutorial) Prerequisites: GEOG 221.

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. (Lecture/Tutorial) Prerequisites: GEOG 221 (formerly 121) and GEOG 241 (formerly 141). Students with credit for GEOG 443 may not take this course for further credit.

GEOG 385-4 Food Production and the Environment
A critical examination of the current theories and issues in the study of human intervention into the environment and its implications for agricultural systems and food production. (Lecture/Tutorial) Prerequisite: GEOG 221 (formerly 121).

GEOG 386-4 Medical Geography
An introduction to the study of medical geography covering: the determinants of health; distribution and diffusion of disease; and delivery of health care services. (Lecture/Tutorial) Prerequisite: GEOG 241 or GERO 300 or SA 218.

GEOG 387-4 Geography and Gender
An examination of how gender difference interacts with spatial and environmental factors including the natural and built environments and rural and urban landscapes. (Lecture/Tutorial) Prerequisites: GEOG 241.

GEOG 402-0 Geography Practicum III
This is the third semester of work experience in the Geography Co-operative Education program. Prerequisites: GEOG 303 and completion of 56 semester hours credit with a cumulative GPA of 2.75. Students should apply to the Faculty of Arts Co-op co-ordinator by the end of the third week of the preceding semester.

GEOG 403-0 Geography Practicum IV
This is the last semester of work experience in the Geography Co-operative Education program. Prerequisites: GEOG 402 and a cumulative GPA of 2.75. Students should apply to the Faculty of Arts co-op co-ordinator by the end of the third week of the preceding semester.

GEOG 404-2 Directed Readings

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 409-0 Geography Practicum V
This is an optional semester of work experience in the Geography Co-operative Education program. Prerequisite: GEOG 403. Students should apply to the Faculty of Arts co-op co-ordinator by the end of the third week of the preceding semester.

GEOG 411-4 Hydrology II
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. (Lecture/Laboratory) Prerequisites: one of GEOG 311, 313, or 314; one of GEOG 251, STAT 101, 102 or 103.
GEOG 412-4 Quaternary Geology and Geomorphology
Stratigraphy of the Quaternary Period; geomorphic and sedimentary evidence of glaciation; models of glacial and periglacial environments. Laboratory and field study of glacial deposits. (Lecture/Laboratory/Field Work) Prerequisite: GEOG 313. Students who completed GEOG 313 prior to Fall 1988 already have the required prerequisite and may enroll directly in this course.

GEOG 413-4 Geomorphology III
Advanced treatment of topics in glacial and fluvial geomorphology with emphasis on current research problems. (Lecture/Laboratory) Prerequisite: GEOG 313.

GEOG 414-4 Climatology III
An examination of recent advances in climatology and application of atmospheric process models. (Lecture/Laboratory) Prerequisite: GEOG 313.

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. (Lecture/Seminar) Prerequisite: GEOG 315. Students who completed GEOG 315 prior to Fall 1988 also require permission of the instructor.

GEOG 416-4 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. (Lecture/Seminar) Prerequisite: One of GEOG 213 (formerly 313), 214 (formerly 314), 215 (formerly 315), 317.

GEOG 417-4 Soil Science II
Advanced treatment of topics in soil science: soil physics, soil chemistry, soil biology, soil classification and/or forest soils. (Lecture/Laboratory) Prerequisite: GEOG 317.

GEOG 418-4 Land Evaluation
The extensive classification of a landscape based on geology, geomorphology, soils, vegetation, and historic and current land-use, and the assessment of qualitative values as an aid to multiple land-use management. (Lecture/Seminar) Prerequisites: two of GEOG 213 (formerly 313), 215 (formerly 315) and 317.

GEOG 419-4 Mass Transfer in the Biosphere
An introduction to the processes responsible for mass transfer in the biosphere. Emphasis will be given to the transfer of toxic agents in the environment. (Seminar/Laboratory) Prerequisite: GEOG 314 or 315 or enrollment in Environmental Toxicology minor program or Post Baccalaureate Diploma in Environmental Toxicology.

GEOG 420-4 Comparative Cultural Geography
A comparative study of selected world cultures and landscapes in the light of recent theoretical developments in geography. (Lecture/Seminar) Prerequisites: at least 60 credit hours including 8 hours of upper division Geography courses.

GEOG 421-4 Geography of Resource Development
Geographical aspects of development and management of natural resources. Particular attention will be given to contemporary problems in Western Canada. (Lecture/Seminar) Prerequisites: at least 60 credit hours including 8 hours of upper division Geography courses.

GEOG 422-4 Geography of the Third World
A geographic study of 'development' and 'underdevelopment' with particular references to selected lesser developed regions. (Lecture/Seminar) Prerequisites: at least 60 credit hours including GEOG 111, 221 (formerly 121), and 241 (formerly 141).

GEOG 424-4 Urban Transportation
An extension of the theoretical and conceptual approach to transportation (GEOG 324), but with application to urban areas. (Lecture/Seminar) Prerequisites: GEOG 324 and 362.
GEOG 426-4 Multinational Corporations and Regional Development
Relationships between corporate and regional development; in particular the implications of the evolution, structure and strategy of multinational corporations for regional development. (Lecture/Seminar) Prerequisite: at least 60 credit hours 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. (Lecture/Seminar) Prerequisite: GEOG 327 or 423, or permission of the instructor.

GEOG 441-4 Geography of Urban Regions
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. (Lecture/Seminar) Prerequisite: at least 60 credit hours 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. (Lecture/Seminar/Laboratory) Prerequisite: 60 credit hours 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. (Lecture/Seminar) Prerequisite: GEOG 322 or 385.

GEOG 446-4 Geography of Contemporary Societies
Examination and analysis of the contemporary landscape as a cultural expression of Anglo-Saxon thought since the 1920's. The focus will be on North American landscapes, but with reference to convergent phenomena elsewhere in the world. The effect upon the contemporary landscape of certain ideas and institutions prevalent in Anglo-Saxon cultures since World War I. The origin, spread and differentiation of selected humanized landscape features are constructed. (Lecture/Tutorial) Prerequisite: GEOG 344. Courses in the humanities and fine arts are recommended. Students who completed GEOG 346 prior to Fall 1988 may not take this course for further credit.

GEOG 447-4 Critical Methods for Urban Analysis
An advanced course on contemporary critical methods for urban analysis including functionalism, marxism, structuralism, structuration analysis, discourse analysis and deconstruction. (Lecture/Tutorial) Prerequisite: GEOG 344.

GEOG 448-4 Public Policy, Theory and Human Geography
This course will outline and explore the contributions that a theoretically informed human geography can make to debates on urban policy and the urban landscape. As will be demonstrated, a geographic perspective can provide a number of critical insights into both empirical and theoretical arenas. (Lecture/Tutorial) Prerequisite: GEOG 301.

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 implication for urban policy and planning. (Lecture/Tutorial)

GEOG 452-4 Advanced Issues in Geographic Information Systems
This course explores operational and management issues in GIS. Topics covered are: data exchange standards and large data bases; the use of spatial analysis techniques in the GIS context; applications of GIS in various fields; social impact of GIS; legal aspects; effects on management decisions; implementation of GIS in an institutional setting, including cost and benefit, benchmarking, request for proposals; future directions in GIS. (Lecture/Laboratory) Prerequisite: GEOG 354 or 355. Students who completed GEOG 452 prior to Fall 1988 may take this course for further credit.

GEOG 453-4 Digital Image Processing
Computational aspects of remote sensing. Systems consideration; statistical extraction; image enhancement; thematic information extraction; change detection. (Lecture/Laboratory) Prerequisite: GEOG 353. Students who completed GEOG 453 prior to Fall 1988 may take this course for further credit.
GEOG 460-4 Selected Regions
A study of the geographical character of a major world region. (Lecture/Seminar) Prerequisite: at least 60 credit hours including 8 hours of upper division Geography courses.

GEOG 462-4 Canada and the United States
Selected problems in the geography of Canada and the United States; emphasizes territorial differentiation in cultures, regional resource problems, interregional resource conflicts, and the question of the geographical basis for national unity. (Lecture/Seminar) Prerequisite: at least 60 credit hours including 8 hours 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. (Lecture/Seminar) Prerequisite: 60 credit hours including 8 hours of upper division Geography.

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. (Lecture/Seminar) Prerequisite: at least 60 credit hours including 8 hours of upper division Geography courses.

GEOG 470-4 The Geography of Western Canada
A regional geographic interpretation of British Columbia and the Prairies. The physical environment, population, land tenure, regional resource problems, economic development and the settlement process will be examined to explain the geographic character of Western Canada. (Lecture/Seminar) Prerequisite: at least 60 credit hours including 8 hours of upper division Geography courses.

GEOG 475-4 Historical Geography II
An examination of the ways in which the study of historical geography has been adapting to new problems, new methodologies, new techniques, and new sources. The course will attempt to deal primarily with the application of historical geography to a North American context with an emphasis on Canada and British Columbia. (Lecture/Seminar) Prerequisite: GEOG 375.

GEOG 489-4 Selected Topics
The topics will vary from semester to semester depending on the interests of faculty and students. (Lecture/Tutorial) Prerequisites: 75 credit hours including 30 credit hours in Geography.

GEOG 490-4 Selected Topics
The topics will vary from semester to semester depending on the interests of faculty and students. (Lecture/Tutorial) Prerequisite: 75 credit hours including 30 credit hours 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 credit hours and consent of supervisor. See a departmental academic advisor for details.

Gerontology Program
Location: 2800 Simon Fraser University at Harbour Centre
Telephone: 778.782.5065
Director: Dr. G.M. Gutman BA (Br Col), MA (Alta), PhD (Br Col)

Professor
G. Gutman BA (Br Col), MA (Alta), PhD (Br Col), Director of Program

Associate Professor
A.V. Wister BA, MA, PhD (W Ont)
Adjunct Professors
G. Birch BASc, PhD (Br Col)
S. Brink BA (Madras), MSc, PhD (Purdue)
S. Crawford BHE (Br Col), MSc (Lond), PhD (S Fraser)
V. Doyle BA (Vic, BC), EdM (Harv), PhD (S Fraser)
E. Gallagher BSc Nursing (Wind), MSc Nursing (Duke), PhD (S Fraser)
N. Hall BA (Manit), PhD (McM)
M. Hollander MSc (Br Col)
D. Jackson AA, BTh (Sask)
D.L. Johnson BSc, MSc, PhD (Br Col)
P. Lomas BA (Camb), MSW (Br Col), PhD (S Fraser)
L. Trottier BSc (Br Col)
J. Watzke BA (Calif), PhD (Lund)

Associate Members
P. Dossa Sociology and Anthropology
M. Hayes Geography
W. Parkhouse Kinesiology

Steering Committee
E.W. Ames, Psychology
N.M.G. Bhakthan, Kinesiology
Y.L. Chow, Chemistry
E.A. Fattah, Criminology
E.M. Gee, Sociology
J.P. Herzog, Economics/Business Administration
R.B. Horsfall, Geography
M.M. Kimball, Psychology/Women's Studies
M. Manley-Casimir, Education
D. Zarn, Engineering Science

The Post Baccalaureate Diploma Program is available for students who have already completed a Bachelors degree and are working or planning to work with the elderly. It provides a broadly based, multidisciplinary perspective on aging as well as the requisite knowledge and skills for meaningful intervention and application of research findings to practice.

For information about the Post Baccalaureate Diploma Program general regulations, refer to Continuing Studies.

Undergraduate courses
Course descriptions for all Gerontology undergraduate courses.

Admission Requirements
- completion of a Bachelors degree from a recognized university with a minimum graduation grade point average of 2.5.
- previous work experience in Gerontology or related field for at least one year. Students without this requirement may be admitted, but will be required to undertake a practicum as part of their diploma requirements.
- three letters of reference attesting to the applicant's personal qualities and characteristics, ability to complete a post baccalaureate program of studies and career potential and dedication to the field of Gerontology.

Program Requirements
Successful completion of an approved program comprised of 30 semester hours of approved course work. Of those 30 semester hours, 19 are earned by completing six required courses listed below. The remaining 11 semester hours are selected from the specified list of optional courses.

A CGPA of 2.5 is required on courses applied toward the diploma.

Students entering the program without appropriate work experience will be required to complete a practicum in order to graduate.
Required Courses
GERO 300-3 Introduction to Gerontology
GERO 301-3 Research Methods in Gerontology
GERO 400-3 Seminar in Applied Gerontology
KIN 461-3 Physiological Aspects of Aging
PSYC 357-3 Psychology of Adulthood and Aging
SA 420-4 Sociology of Aging

Optional Courses
CRIM 411-3 Crime and Victimization of the Elderly
GS 351-3 Family Development II: Maturing and Extended Families
GERO 401-3 Aging and the Environment
GERO 402-3 Drug Issues in Gerontology
GERO 403-3 Counselling with Older Adults
GERO 404-3 Health and Illness in Later Life
GERO 405-3 Aging in Rural Canada
GERO 406-3 Death and Dying
GERO 407-3 Nutrition 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
KIN 460-3 Cellular Mechanisms and Theories of Aging
PSYC 456-5 Psychology of Adulthood and Aging
SA 319-4 Culture, Ethnicity and Aging
SA 460-4 Special Topics in Sociology and Anthropology (when topic is Medical Anthropology)

Notes:
Most diploma program courses have prerequisites. A student who has not completed appropriate course prerequisites may be required to do so before registering in the diploma program courses. Contact the program assistant for information on course prerequisites and general program requirements.

Students are advised to take GERO 300 when they begin the program, and GERO 400 near the end of their program.

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 those listed above may be designated for Gerontology Diploma credit from semester to semester. Check with the program for listings.

Gerontology Undergraduate Courses

Faculty of Arts

GERO 300-3 Introduction to Gerontology
Examination of the aging process from a multi-disciplinary perspective. Physical and health factors in aging, psychological aspects of behavior in later life, 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. (Lecture/Seminar) Prerequisite: 60 semester hours credit.

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. (Lecture/Seminar) Prerequisites: STAT 103 (or equivalent) recommended.
GERO 400-3 Seminar in Applied Gerontology
Discussion of current issues in applied gerontology. Interdisciplinary orientation, drawing upon resource persons from various academic departments within the University and practitioners in the community. Course requirements include a program evaluation or a research paper. (Seminar) Prerequisites: GERO 300, 301 and at least one of the following: PSYC 357, SA 420 or KIN 461.

GERO 401-3 Aging and the Built Environment
Impact of the macro- and micro-environment 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. (Seminar) Prerequisite: 60 semester hours credit. GERO 300 recommended.

GERO 402-3 Drug Issues in Gerontology
An overview of issues relating to drugs and the elderly. Topics will include: an introduction to pharmacological issues as they apply to older people; uses and abuses of commonly prescribed and non-prescribed medication; medication reviews; government subsidy programs. This course is designed for those who work or plan to work with elderly persons. (Lecture/Seminar) Prerequisite: GERO 300.

GERO 403-3 Counselling 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. (Lecture/Seminar) Prerequisites: GERO 300 and PSYC 357 or SA 420. This course is restricted to students in the Gerontology diploma program.

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. (Lecture/Seminar) Prerequisite: GERO 300.

GERO 405-3 Aging in Rural Canada
An examination of the demographic trends in aging in 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. (Lecture/Seminar) Prerequisite: 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. (Lecture/Seminar) Prerequisites: 60 semester hours credit. GERO 300 recommended.

GERO 407-3 Nutrition and Aging
This course will combine seminars and lectures in the examination of 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. (Lecture/Seminar) Prerequisites: 60 semester hours credit, GERO 300 recommended.

GERO 410-3 Special Topics in Gerontology I
The treatment of selected psychological, sociological, economic, biological and practical aspects of the aging of individuals and populations. (Lecture/Seminar) Prerequisite: 60 semester hours credit. GERO 300 recommended.

GERO 411-3 Special Topics in Gerontology II
The treatment of selected psychological, sociological, economic, biological and practical aspects of the aging of individuals and populations. (Lecture/Seminar) Prerequisite: 60 semester hours credit. GERO 300 recommended.
GERO 412-3 Special Topics in Gerontology III

The treatment of selected psychological, sociological, economic, biological and practical aspects of the aging of individuals and populations. (Lecture/Seminar) Prerequisite: 60 semester hours credit. GERO 300 recommended.

Department of History
Location: 6026A Academic Quadrangle
Telephone: 778.782.3521
Chair: R.E. Boyer BA (Westmount), MA (Wash), PhD (Conn)

Jack and Nancy Farley Endowed University Professor
J. Parr BA (McG), MA, PhD (Yale), FRSC

Professor Emeritus
D.S. Kirschner BA, MA, PhD (Iowa)

Professors
R.E. Boyer BA (Westmount), MA (Wash), PhD (Conn), Chair of Department
W.L. Cleveland BA (Dartmouth), MA, PhD (Prin)
D.L. Cole AB (Whitman), MA (George Washington), PhD (Wash)
C.R. Day BA (Stan), MA, PhD (Harv)
R.K. Debo BA, MA, PhD (Nebraska)
P.E. Dutton BA (W Ont), MA, PhD (Tor), MSD (PIMS)
M.D. Fellman AB (Mich), PhD (Northwestern)
J.F. Hutchinson BA (Tor), MA (Br Col), PhD (Lond)
E.R. Ingram MA (Oxf), PhD (LSE)
H.J.M. Johnston BA (Tor), MA (W Ont), PhD (Lond)
J.M. Kitchen BA, PhD (Lond), FRHistS, FRSC
J.I. Little BA (Bishop's), MA (New Br), PhD (Ott)
R.C. Newton BA (Rutgers), MA, PhD (Flor)
M.L. Stewart BA (Calg), MA, PhD (Col)**
J.O. Stubbs BA (Tor), MSc (LSE), DPhil (Oxf), President of the University

Associate Professors
A.D. Aberbach BA (Rutgers), MA (Miami), PhD (Flor)
C.I. Dyck BA, MA (Sask), PhD (Sus)
R.L. Koepke BA (Iowa), MA, PhD (Stan)
T.M. Loo BSc (Br Col), MA (Tor), PhD (Br Col)
D. MacLean BA (SUNY), MA, PhD (McG)
D. Ross MA (Aberd), PhD (Lond)
A. Seager BA, MA (McG), PhD (York)
J.P. Spagnolo BA, MA (Beirut), D Phil (Oxf)
P. Stigger BA (Brist)

Assistant Professors
J.S. Craig BA, MA (Car), PhD (Camb)
M. Leier BA, MA (S Fraser), PhD (Mem)
H. Pabel BA, MA (Tor), PhD (Yale)
A.E. Tone BA (Qu), MA, PhD (Emory)

Lecturer
H. Gay BSc, PhD (Lond), D Phil (Sussex)

Instructor
L. Armstrong BA, MA (Dal), MDiv, MA (Tor)*
Undergraduate courses
Course descriptions for all History undergraduate courses.

Major Program
Students must obtain at least 18 semester hours in 100 and 200 division History courses, including at least six hours in 100 division, to enter the major program.

Students should plan lower division work with upper division requirements in mind. An examination of the program will show that it offers a wide range of courses organized into three principal groups. Students will have ample opportunity to specialize in courses in any one of these groups, but for breadth of understanding, they must take at least two 300 or 400 division courses from each group. A careful selection of lower division courses prepares students to meet this requirement and lays the foundation for specialization in specific areas. For this reason, students are advised to take at least one course from each of the following groups of lower division courses.

Group 1 - Europe
HIST 105-3 Western Civilization from the Ancient World to the Reformation Era
HIST 106-3 Western Civilization from the Reformation Era to the 20th Century
HIST 216-3 The Ancient World
HIST 219-3 Byzantium and the Barbarian West from the Fourth to the Twelfth Centuries
HIST 220-3 Europe from the 12th to the Mid-16th Century
HIST 223-3 Europe from the Mid-16th Century to the French Revolution
HIST 224-3 Europe from the French Revolution to the First World War
HIST 225-3 20th Century Europe

Group 2 - North America
HIST 101-3 Canada to Confederation
HIST 102-3 Canada Since Confederation
HIST 104-3 History of the Americas to 1763
HIST 201-3 The History of Western Canada
HIST 202-3 BC and Confederation: Studies in Historical Method
HIST 204-3 The Social History of Canada
HIST 212-3 The United States to 1877
HIST 213-3 The United States since 1877

Group 3 - Latin America, the Middle East, Africa
HIST 146-3 Africa in Recent History
HIST 151-3 The Modern Middle East
HIST 208-3 Latin America: The Colonial Period
HIST 209-3 Latin America: The National Period
HIST 230-3 The Expansion of Europe
HIST 231-3 The Origins of Modern Africa: Conquest, Resistance and Resurgence
HIST 249-3 The Origins of Islam and the Emergence of Islamic Civilization
HIST 251-3 The Western Imperial Presence in the Middle East and North Africa
HIST 252-3 Islamic India
HIST 255-3 The Emergence of Modern China
Note: Candidates for a History major may count one or both of WS 201 and WS 202 towards the required 18 lower division History semester hours credit.

All students must obtain credit in at least nine hours of lower division history credit before enrolling in upper division work.

Major students must obtain credit in at least 32 semester hours of 300 and 400 division work in History, including at least 12 hours in 300 division work and at least 12 semester hours in 400 division work; and they must select at least two courses from each of the following groups of courses.

**Group 1 - Europe**
- HIST 310-4 Women and the Family in Modern Europe
- HIST 311-4 Education and Childhood in European History
- HIST 312-4 Poverty, Crime, and Madness: Society and the Outcast
- HIST 314-4 England in the Later Middle Ages
- HIST 315-4 English Society from the Reformation to the Mid-18th Century
- HIST 316-4 English Society since the Mid 18th Century
- HIST 318-4 Early Modern France
- HIST 319-4 France since 1800
- HIST 331-4 Germany from the Reformation to 1815
- HIST 332-4 Germany since 1815
- HIST 334-4 Russia to 1900
- HIST 335-4 Twentieth Century Russia
- HIST 337-4 The Balance of Power in Europe
- HIST 338-4 World War II
- HIST 360-4 The History of Science: 1100-1725
- HIST 361-4 The History of Science: The 18th Century to the Present
- HIST 402-4 Renaissance Italy
- HIST 403-4 The European Reformation
- HIST 404-4 The Civil War and Interregnum in England
- HIST 405-4 Absolutism and Enlightenment in Europe
- HIST 406-4 The Industrialization of Europe
- HIST 407-4 Popular Culture in Great Britain and Europe
- HIST 408-4 Liberty and Authority in 19th Century Thought
- HIST 410-4 History of Science, Technology and Everyday Life 1870-1950
- HIST 411-4 Class and Gender in Modern Europe
- HIST 414-4 The Impact of the Great War
- HIST 415-4 Victorian Britain
- HIST 416-4 The French Revolution
- HIST 417-4 France in Modern Times
- HIST 418-4 Modern Spain and the Civil War
- HIST 419-4 Modernization and Reform in Russia 1860-1930
- HIST 420-4 The History of Russian Foreign Policy from Catherine the Great to Stalin

**Group 2 - North America**
- HIST 322-4 Atlantic Migration
- HIST 324-4 Slavery in the Americas
- HIST 326-4 The History of Native People in Canada
- HIST 327-4 Canadian Labor and Working Class History
- HIST 328-4 The Province of Quebec from Confederation
- HIST 329-4 Canadian Family History
- HIST 340-4 United States Foreign Policy
- HIST 379-4 The Transformation of American Culture 1830-1900
- HIST 380-4 Industrial Culture in Modern America
- HIST 381-4 The American Presidency
HIST 383-4 The American Dream in the Twentieth Century
HIST 385-4 Canadian and BC Art
HIST 423-4 Problems in the Diplomatic and Political History of Canada
HIST 424-4 Problems in the Cultural History of Canada
HIST 425-4 Gender and History
HIST 426-4 Law and Society in Historical Perspective
HIST 428-4 Problems in the Social and Economic History of Canada
HIST 430-4 New France
HIST 431-4 British North America, 1760-1850
HIST 435-4 The Canadian Prairies
HIST 436-4 British Columbia
HIST 446-4 The Revolutionary and Early National Period in the United States
HIST 450-4 The Era of the American Civil War
HIST 451-4 Innocence and Corruption in Nineteenth Century American Myth
HIST 452-4 The US in the Progressive Era
HIST 453-4 The US Between the Wars
HIST 454-4 Gender and Sexuality in US History
HIST 484-4 History of Women in North America

Group 3 - Latin America, the Middle East, Africa
HIST 324-4 Slavery in the Americas
HIST 343-4 Africa and the Slave Trade
HIST 344-4 East Africa
HIST 346-4 Central Africa
HIST 348-4 A History of South Africa
HIST 350-4 Continuity and Change in the Ottoman Empire and Turkey from 1453 to 1938
HIST 352-4 Religion and Politics in Modern Iran
HIST 354-4 Imperialism and Modernization in Asia and the Middle East
HIST 355-4 The Arab Middle East in the Twentieth Century
HIST 458-4 Problems in Latin American Regional History
HIST 459-4 Problems in the Political and Social History of Latin America
HIST 465-4 The Emergence of the Israelis and Palestinians in Historical Perspective
HIST 467-4 Change and Revolution in Modern Egypt
HIST 469-4 Islamic Social and Intellectual History
HIST 473-4 The Emergence of the Apartheid State, 1902-1959
HIST 481-4 British India
HIST 482-4 Emergent African Nationalism
HIST 483-4 The Struggle for Identity in Sub-Saharan Africa

Consult one of the department's advisors before beginning the program.

The following courses are interdisciplinary courses with 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

Concentration in Middle Eastern and Islamic History
Students may qualify for this concentration by completing these courses.

two of
HIST 151-3 The Modern Middle East
HIST 249-3 The Origins of Islam and the Emergence of Islamic Civilization
HIST 251-3 The Western Imperial Presence in the Middle East and North Africa
HIST 252-3 Islamic India

four of
HIST 350-4 Continuity and Change in the Ottoman Empire and Turkey from 1453 to 1938
HIST 352-4 Religion and Politics in Modern Iran
HIST 354-4 Imperialism and Modernization in Asia and the Middle East
HIST 355-4 The Arab Middle East in the Twentieth Century
HIST 465-4 The Emergence of the Israelis and Palestinians in Historical Perspective
HIST 467-4 Change and Revolution in Modern Egypt
HIST 469-4 Islamic Social and Intellectual History

Honors Program
This program enables eligible undergraduates to enhance the quality of the undergraduate experience. In an intensive format of small seminars, students are encouraged to refine discussion skills, expository writing, and critical thought. No more than 30 students are enrolled at any one time. Those who wish to pursue the honors program apply to the program supervisor, ordinarily at the end of the fourth level. Those admitted must maintain a minimum GPA of 3.33 in all honors courses, and a minimum of 3.0 in all other upper division courses. The three required honors courses must be completed in three semesters in a Fall/Spring/Fall/Spring sequence and all other work must be completed within six semesters of admission to the program.

Honors students must complete the following.

HIST 300-4 Approaches to History
HIST 305-2 Honors Tutorial
HIST 495-4 Seminar in Historical Methods
HIST 498-8 Honors Essay

In addition to the 18 credit hours of honors courses, honors students must complete 44 upper division credit hours. Students are encouraged to take courses outside the History Department but at least 50 of the 62 upper division hours must be in History courses. See Faculty of Arts Honors requirements.

Minor Program
Students intending to enter the minor program must obtain at least nine hours credit in 100 and 200 division course work in History.

Minor students must obtain credit in 300 and 400 division work, totalling at least 16 semester hours credit, with at least four semester hours in each level.

Courses with appropriate historical content in the Departments of Women's Studies, and Spanish and Latin American Studies, and in the Humanities Program will be considered by the Department of History for designated credit toward the minor in History. Students wishing to use such courses for their minor must obtain prior approval from the department's advisors.

Languages Other Than English
Although not required for a BA degree in History, it is often useful to have acquaintance with a language other than English for many History courses. For this reason students, especially those who intend to pursue graduate courses, should consider including a second language in their programs.

Joint Major in History and Latin American Studies
The attention of students is drawn to the joint major program in History and Latin American Studies. See the Latin American Studies section.

Joint Major in History and Canadian Studies
The attention of students is drawn to the joint major program of History and Canadian Studies. See the Canadian Studies section.
Joint Major in French, History and Politics
This joint major offers a framework for the study of the language, history, politics and culture of the French speaking people of Canada and the World. It prepares for careers in civil service, politics (either with an emphasis on Canadian government and politics or with an emphasis on international relations), diplomatic service, international organizations, journalism, teaching and archival work. For further details, see the Department of French section.

Extended Minor Program
An extended minor 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.

The extended minor in History requires 18 credit hours in 100 and 200 division course work and 16 credit hours in 300 and 400 division, with at least four semester hours in each level.

Public History
Location: 6024 Academic Quadrangle
Telephone: 778.782.3446
Co-ordinator: Mrs. R. Jantzi

Courses are designed for general interest and for pre-professional training in the public sector of history - museums, archives, business, labor, ethnic and administrative history work. They can count towards majors, minors and honors in History.

A post-graduate diploma and a certificate program are available. Completion requires participation in one or more internships.

Post Baccalaureate Diploma in Public History
A Post Baccalaureate Diploma program in Public History is available for students who have already completed a Bachelors degree. The program is a historical study as it is practised in non-academic settings - in museums, archives, government agencies, cultural societies, conservation authorities, businesses, families, and other public and private institutions.

The program offers an opportunity for ordered and sequential study based on established undergraduate courses in Canadian and public history.

It combines core courses in history with optional ones in related disciplines, and it recognizes the importance of applied skills by requiring appropriate work experience or internship in the Public History program, or completion of a special project.

For information about the Post Baccalaureate Diploma program general regulations, refer to Continuing Studies.

Program Requirements

- Successful completion of an approved program of 30 hours of third and fourth year courses, or graduate level courses if appropriate. Of those 30 semester hours, 12 are to be taken in the set of core courses described below.
- Program completion within five years of admission. Most students are expected to finish within two or three years. Students must maintain a GPA of 2.5 on courses used for the diploma.

Core Courses
HIST 301-4 Heritage Preservation
HIST 302-4 Archives Methods and Uses
HIST 303-4 Museums Method and Use

and one of
HIST 435-4 The Canadian Prairies
HIST 436-3 British Columbia
Optional Courses
ARCH 336-3 Special Topics in Prehistoric and Primitive Art
ARCH 372-5 Archaeology Laboratory Techniques
CMNS 362-4 Evaluation Methods for Applied Communication Research
GEOG 344-4 Geography of Modern Industrial Societies
GEOG 375-4 Historical Geography I
GEOG 475-4 Historical Geography II
HIST 326-4 The History of Native People in Canada
HIST 385-4 Canadian and BC Art
HIST 424-4 Problems in the Cultural History of Canada
HIST 428-4 Problems in the Social and Economic History of Canada

To fulfill the optional course requirement, students may, upon the recommendation of the Program Co-ordinator, select a course not included among listed options, but with content appropriate to the program.

Internships consist of appropriate documented work experience, e.g. employment (normally two years or more) or substantial volunteer work in a historical institution, or participation in the Public History Internship, or completion of a special project. Relevant co-op education experience may be included.

Students without such experience wishing to participate in the summer job internship should contact the Program Co-ordinator. These jobs in archival, museum and other institutions will be supervised, paid and non-credit.

Certificate in Public History
The certificate program is available to those without a Bachelors degree. Credits earned in the program may also be applied toward a Bachelors degree.

The program is interdisciplinary. It combines core courses in history with optional ones in related disciplines and it recognizes the importance of applied skills by requiring appropriate work experience or internship in the Public History program, or completion of a special project. It also offers opportunities for students to participate in credit-free academic and professional events.

Courses are available on a full or part time basis, during the day and evening, on the Burnaby Mountain campus, through Simon Fraser University at Harbour Centre and Distance Education.

Admission
Admission is governed by the University's admissions regulations.

Program Requirements
The student must successfully complete 24 semester hours, with 12 of these 24 semester hours earned by completing the following.

HIST 102-3 Canada since Confederation
HIST 201-3 The History of Western Canada

and two of
HIST 301-4 Heritage Preservation
HIST 302-4 Archives Methods and Uses
HIST 303-4 Museums Method and Use

The student must complete at least four courses (one of which must be History) from the following totalling at least 12 semester hours.

ARCH 223-3 The Prehistory of Canada
ARCH 336-3 Special Topics in Prehistoric and Primitive Art
ARCH 372-5 Archaeology Laboratory Techniques  
CMNS 261-3 Documentary Research in Communication  
CMNS 362-4 Evaluation Methods for Applied Communication Research  
ECON 101-3 The Canadian Economy  
ECON 261-3 Resources and The Economy of British Columbia  
GEOG 241-3 Social Geography  
GEOG 344-4 Geography of Modern Industrial Societies  
GEOG 375-4 Historical Geography I  
HIST 326-4 The History of Native People in Canada  
HIST 385-4 Canadian and BC Art  
HIST 424-4 Problems in the Cultural History of Canada  
HIST 428-4 Problems in the Social and Economic History of Canada  
HIST 435-4 The Canadian Prairies  
HIST 436-4 British Columbia

To fulfill the optional course requirement, students may, upon the recommendation of the Program Co-ordinator, select a course not included among listed options, but with content appropriate to the program.

Internships consist of appropriate documented work experience, e.g. employment (normally two years or more), substantial volunteer work in a historical institution, participation in the Public History Internship, or completion of a special project. Those without such experience should contact the Program Co-ordinator. These jobs in archival, museum and other institutions will be supervised, paid, or volunteer and are non credit.

Notes:
Credits applied toward this certificate may not be applied toward any other Simon Fraser University certificate or diploma, but they may be applied toward major program or minor program requirements or toward a Bachelors degree under the normal regulations governing those programs.

At least 18 of the required 24 semester hours must be completed at Simon Fraser University. Credit for a maximum of two courses (totaling not more than six semester hours) of comparable content and level may be transferred from previous university/college study toward the requirements of the program upon the recommendation of the Department of History.

Non-credit seminars and lectures complementing the course of study in Public History are strongly recommended for all certificate students. Writing improvement, legal research, and communication media skills are examples.

Co-operative Education Program
Co-operative Education is a system which combines work experience with academic studies. Students spend alternate semesters on campus and in paid, study-related jobs which provide practical experience in the social sciences and interpretive skills and complements a degree in History.

Interested students can complete either a general Co-op program or have the Co-op work semesters qualify as the internship portion of the Public History Program. Arrangements for the work experiences are made through the department's Co-op Co-ordinator and the University's Office of Co-op Education. For details, students should refer to the Co-operative Education section.

History Undergraduate Courses

Faculty of Arts
Note: In the courses which follow, where it is shown under prerequisites that a course is "recommended," such a course is not mandatory, but is recommended preparation for entry.

Lower Division Courses
100 division courses are designed to introduce students to the main areas of the department's offerings - Canadian, American, and Latin American history, European history, and African and Middle Eastern history.
HIST 101-3 Canada to Confederation
A survey of Canadian history to 1867. (Lecture/Tutorial)

HIST 102-3 Canada Since Confederation
A survey of Canadian history since 1867. (Lecture/Tutorial)

HIST 104-3 History of the Americas to 1763
An examination of the pre-European Indian cultures; the explorations, conquest and colonization of North and South America by the French, English, Spanish and Portuguese. Stress will be placed on the comparative nature of these new world societies. (Lecture/Tutorial)

HIST 105-3 Western Civilization from the Ancient World to the Reformation Era
An introduction to the Greek and Roman origins of Western Civilization, and its development to the 16th century. (Lecture/Tutorial)

HIST 106-3 Western Civilization from the Reformation Era to the 20th Century
A sequel to HIST 105 covering the expansion and modernization of the European world. (Lecture/Tutorial)

HIST 146-3 Africa in Recent History
Colonialism, independence and nation building. (Lecture/Tutorial)

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. (Lecture/Tutorial)

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. (Lecture/Tutorial)

HIST 202-3 BC and Confederation: Studies in Historical Method
This course is intended to teach students how to investigate historical methods. The subject - BC and Confederation - will be used as a vehicle to introduce various types of history: social, economic, ethnic, diplomatic and biographical. The emphasis will be on examining the documentary evidence of the period and the process by which historians make historical judgements. (Lecture/Tutorial) Prerequisites: HIST 101 or 102 recommended.

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. (Lecture/Tutorial) Prerequisites: HIST 101 and 102 recommended.

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. (Lecture/Tutorial) Prerequisite: HIST 104 recommended.

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. (Lecture/Tutorial) Prerequisite: HIST 208 recommended.
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. (Lecture/Tutorial) Prerequisite: HIST 104 recommended.

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. (Lecture/Tutorial) Prerequisite: HIST 212 recommended.

HIST 216-3 The Ancient World
Aspects of the ancient history of the Near East, Greece and Rome. (Lecture/Tutorial) Prerequisites: HIST 105 and 106 recommended.

HIST 219-3 The Early Middle Ages
An examination of Eastern and Western Christendom from the late antiquity to the Renaissance of the 12th century emphasizing religious developments, political and social changes. (Lecture/Tutorial)

HIST 220-3 Europe from the 12th to the Mid-16th Century
This course will examine European development from the high middle ages to the end of the Reformation. Considerable attention will be given to the changing character of medieval civilization, the Italian Renaissance and the Reformation. (Lecture/Tutorial)

HIST 223-3 Europe from the Mid-16th Century to the French Revolution
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. (Lecture/Tutorial)

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. (Lecture/Tutorial)

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. (Lecture/Tutorial)

HIST 230-3 The Expansion of Europe
The course will deal with the expansion of Europe with European attitudes to non-Europeans, and with the principles of colonial administration. (Lecture/Tutorial)

HIST 231-3 The Origins of Modern Africa: Conquest, Resistance and Resurgence
Continuity and change in sub-Saharan Africa from the era of the slave trade until World War II. (Lecture/Tutorial)

HIST 249-3 The Origins of Islam and the Emergence of 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 thirteenth century. Emphasis will be place 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. (Lecture/Tutorial)

HIST 251-3 The Western Imperial Presence in the Middle East and North Africa
A general history of British and French colonialism and imperialism in the Middle East with an examination of the different patterns of political, economic, military, educational, and administrative control established by these two powers, particularly in the period of European supremacy after World War I. An examination, also, of imperial rivalries and the process of decolonization culminating in the Suez crisis of 1956 and the involvement of the super-powers. (Lecture/Tutorial) Prerequisite: HIST 151 recommended.
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. (Lecture/Tutorial)

HIST 255-3 The Emergence of Modern China
The course concentrates on the history of China from the late eighteenth century to the death of Mao. It will begin with a brief introduction to themes in traditional Chinese society and will conclude with an analysis of the major developments in the history of the People's Republic of China from its establishment in 1949 to the death of Mao in 1976. (Lecture/Tutorial)

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 hours of course work. (Seminar) Prerequisite: at least four university level courses in History recommended.

Upper Division Courses
300 division courses are designed to introduce students to a variety of themes in History and to prepare them for advanced work in 400 division seminars. 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 credit hours (or the equivalent) prior to enrollment in any upper division History course.

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. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 301-4 Heritage Preservation
This course will deal with the historical, social and political aspects of architecture and conservation practices, as well as the integration of historical sites, structures and areas. Both the nature of physical structures, and techniques for their conservation, and the cultural setting of buildings will be analysed, with particular reference to British Columbia. The course will employ on-site as well as classroom materials. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. This course is primarily designed for students in the Public History Program. Other students will only be admitted with permission of the department.

HIST 302-4 Archives Methods and Use
The course will introduce the student to the administration and uses of archives in modern society. It offers students instruction in the use of archival materials, examines current uses of archives by scholars and the community at large, and reflects on the possible future social role of archives. Specific topics will include the history of Canadian archives, archive arrangement and description, records management, information retrieval, acquisition, care of special media, reference service, physical facilities, legal and ethical consideration and questions of professional status and role. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. This course is primarily designed for students in the Public History Program. Other students will only be admitted with permission of the department.

HIST 303-4 Museums Methods and Use
The course will introduce students to the social functions and the techniques of museum work. Specific topics for discussion will include the history and purposes of museums collections, collection cataloguing and management, conservation techniques, gallery design, educational programming, the organization, management, design and funding of museums and their relationships to museums organizations and governments, the roles and functions of museum professionals. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. This course is primarily designed for students in the Public History Program. Other students will only be admitted with permission of the department.

HIST 310-4 Women and the Family in Modern Europe
An introduction to the history of women and the family in Western Europe (mainly Britain and France) from about 1700 to the end of the British struggle for women's suffrage. Readings will include recent studies as well as primary sources. Attention will
be given to methodological problems and conflicting interpretations. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 311-4 Education and Childhood in European History
A survey of changing perceptions of school and childhood in Europe since the 17th century. Some main themes are: child labor; education for gentlemen; technology and education; social mobility through education; and mass culture, the family, and the school. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 312-4 Poverty, Crime, and Madness: Society and the Outcast
An examination of changing attitudes toward poverty, vagrancy, insanity, crime, and disease in Europe since the 16th century. The influence of religion, philanthropy, medicine, and the social sciences in defining outcast groups and in formulating policies for dealing with them. Conflicting interpretations of the origins and functions of the welfare state. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 314-4 England in the Later Middle Ages
An examination of the principal themes in English history from the thirteenth century community of the realm to the emergence of the nation-state in the mid-sixteenth century. (Lecture/Tutorial) Prerequisites: 9 hours of lower division history credit.

HIST 315-4 English Society from the Reformation to the Mid-18th Century
A general study of English history from about 1530 to about 1750. Particular stress will be placed on social, constitutional, and legal developments. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

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. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 318-4 Early Modern France
An examination of the development of France from the religious wars of the sixteenth century through the French revolution. Particular attention will also be given to the Bourbon monarchy and to the enlightenment. (Lecture/Tutorial) Prerequisites: 9 hours of lower division history credits.

HIST 319-4 France Since 1800
An examination of the political, social, economic and intellectual development of France from Napoleon to the Fifth Republic. (Lecture/Tutorial)

HIST 322-4 Atlantic Migration
Topics in the history of European migrations with attention given to the contexts from which the migrants came, why they migrated, and how they adjusted. Examples may be taken primarily from the United States, Canada or Latin America, but reference will be made to all three. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 324-4 Slavery in the Americas
An examination of slavery in the United States, Latin America, and Caribbean with reference to plantation systems, economic conditions, and cultural factors. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 326-4 The History of Native People in Canada
An examination of native history and the evolution of native policy in Canada with emphasis on a particular region or native group. (Lecture/Tutorial) Prerequisites: HIST 101 or 102 recommended. 9 hours of lower division History credit.

HIST 327-4 Canadian Labour and Working Class History
An examination of the history of labour, primarily in English Canada, during the nineteenth and twentieth centuries. The evolution of trade unions and labour-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'? (Lecture/Tutorial) Prerequisites: 9 hours of lower division History credit. HIST 101, 102 and 204 recommended.
HIST 328-4 The Province of Quebec from Confederation
The economic, social, political and cultural history of Quebec. (Lecture/Tutorial) Prerequisites: HIST 101 or 102 recommended. 9 hours of lower division History credit.

HIST 329-4 Canadian Family History
A detailed examination of the changing Canadian family, and its relationship to the state, since the eighteenth century. (Lecture/Tutorial) Prerequisites: 9 hours of lower division History credit.

HIST 331-4 Germany from the Reformation to 1815.
An examination of the principal themes in German social, political, economic and intellectual history from the reformation to the defeat of Napoleon. (Lecture/Tutorial) Prerequisites: 9 hours of lower division History credit.

HIST 332-4 Germany Since 1815
An examination of the principal themes in German political, social, economics and intellectual history from the defeat of Napoleon in 1815 to the reunification in 1990. (Lecture/Tutorial)

HIST 334-4 Russia to 1900
An in-depth study of selected themes in Muscovite and Imperial Russian history. These will include relations between state and society, and between Russians and non-Russians, as well as economic and social modernization. (Lecture/Tutorial) Prerequisites: HIST 105 and 106 recommended.

HIST 335-4 Twentieth Century Russia
An in-depth study of the social, economic, and political history of the Soviet Union, examining its revolutionary origins, rapid modernization, and emergence as a super power. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 336-4 Absolutism and Enlightenment in Europe
An examination of the economic, social, political and intellectual developments in 17th and 18th century continental Europe, with emphasis either on the period of Absolutism or on the Enlightenment. Students will read excerpts from important contemporary sources, such as Locke, Voltaire, Rousseau, and Kant. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. HIST 223 or 224 recommended.

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. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. HIST 225 recommended.

HIST 338-4 World War II
An introduction to the history of the origins and course of the second world war. (Distance Education) Prerequisite: 9 hours of lower division History credit. HIST 225 recommended.

HIST 340-4 United States Foreign Policy
The development and aim of US foreign policy, with special emphasis on the post 1890 period. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. HIST 212 or 213 recommended. Students with credit for HIST 449 under the title 'United States Foreign Policy,' may not take HIST 340 for further credit.

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. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. HIST 146 or 231 recommended. Students with credit for HIST 478 may not enroll in HIST 343.
HIST 344-4 East Africa
A regional study from the Arab and European penetration in the 19th century to the emergence of Kenya, Uganda, and Tanzania as independent states with emphasis on the patterns of economic, political, social and religious change. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 346-4 Central Africa
A regional study from the African, Arab and European incursions in the 19th century to the emergence of Zambia, Malawi and Rhodesia with emphasis on the patterns of economic, political, social and religious change. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

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. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. At least one of the following is recommended: HIST 146, 231.

HIST 350-4 Continuity and Change in the Ottoman Empire and Turkey from 1453 to 1938
A study of Ottoman society and the impact of Ottoman rule in the Middle East from the conquest of Constantinople to the death of Ataturk, 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. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. One of the following is recommended: 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. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. One of the following is recommended: HIST 151, 249, 241.

HIST 354-4 Imperialism and Modernization in Asia and the Middle East
A comparative discussion of European intervention, over the last two centuries, in the socio-economic, intellectual, and political life of selected traditional societies in Asia and the Middle East. This course will study the interaction of these societies with the West, a common denominator in their experiences, while also comparing the ways in which imperialism furthered, hindered or distorted the course of their modernization. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. One of the following is recommended: 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: 9 hours of lower division History credit. One of the following is recommended: HIST 151, 249, 251.

HIST 360-4 The History of Science: 1100-1725
Topics in medieval and renaissance science including Aristotelian/Ptolemaic cosmology, alchemy, physics and the human sciences. The rejection of medieval ideas during the scientific revolution will be studied through the work of Copernicus, Vesalius, Paracelsus, Brahe, Kepler, Galileo, Harvey and Newton. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History or Science credit.

HIST 361-4 The History of Science: The 18th 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. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History or Science credit.
HIST 370-0 Practicum I
This is the first semester of work experience in Co-operative Education. It is meant to be exploratory in nature. Prerequisite: normally 60 semester hours with a minimum CGPA of 2.75. Students should apply to the Co-op Co-ordinator one semester in advance.

HIST 375-0 Practicum II
This is the second semester of the Co-operative Education program. Building on the experience of the first employment semester, this semester will provide a work experience that integrates and builds on the research and writing skills associated with the discipline of history. Prerequisite: normally 75 semester hours (including HIST 370) with a minimum CGPA of 2.75. Students should apply to the Co-op Co-ordinator one semester in advance.

HIST 379-4 The Transformation of American Culture 1830-1900
In 1830 most Americans lived on farms or in small towns, worked on the land, and dreamt of salvation. By 1900 cities, industry, the railroad, electricity, consumerism had transformed material lives. Ideals and fears had also shifted. This course discusses elements of this change, particularly in popular ideology, everyday life, and literary, political and artistic movements. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 212 or 213 recommended.

HIST 380-4 Industrial Culture in Modern America
This course explores changes and developments in modern American industrial life. Special attention will be paid to transitions in the organization of work, technology, business and labor relations in the everyday lives of working men and women. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 381-4 The American Presidency
This course will focus on the role of the presidency in US history: examining the office as envisioned by those who wrote the Constitution; seeing the nature of the office as perceived by some who occupied it; and elaborating on the way some used, failed to use, or abused executive power. Prerequisite: 9 hours of lower division History credit. HIST 212 or 213 recommended. Students with credit for HIST 449 under the same title may not take HIST 381 for further credit.

HIST 383-4 The American Dream in the Twentieth Century
The study of the abiding American belief that anyone who really tries can "make it" in America. Special attention will be given to the function of this myth, and to the shifting attitudes of 20th century social commentators (including novelists and playwrights) toward it. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit. HIST 212 or 213 recommended. Students with credit for HIST 449 under the same title may not take HIST 383 for further credit.

HIST 385-4 Canadian and BC Art
The history of art in Canada and British Columbia examined within the contexts of external influences and of social and intellectual history. The emphasis given to national or to regional art may vary from semester to semester. (Lecture/Tutorial) Prerequisite: 9 hours of lower division History credit.

HIST 390-4 Studies in History I
Special topics. (Lecture/Tutorial) Prerequisites: 9 hours of lower division History credit.

HIST 391-4 Studies in History II
Special topics. (Lecture/Tutorial) Prerequisites: 9 hours of lower division History credit.

HIST 402-4 Renaissance Italy
An assessment of the principal themes in the history of the Italian Renaissance, and of the role of Renaissance Italy in shaping the character of Early Modern Europe. In certain semesters the experience of one or more Italian cities will serve to elucidate these themes. (Seminar) Prerequisites: 9 hours of lower division History. HIST 220 recommended.

HIST 403-4 The 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. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 220 recommended.
HIST 404-4 The Civil War and Interregnum in England
A detailed examination of English history from 1625-1660. A great deal of attention will be devoted to the origins and
development of the Civil War as well as the emergence of new religious and social concepts during the interregnum. Literary
evidence will be used in conjunction with traditional historical sources. (Seminar) Prerequisite: 9 hours of lower division History
credit.

HIST 406-4 The Industrialization of Europe
An examination of the impact of industrialization on political structure, ideological formations and culture in the major European
states from 1750 to 1900. Attention will also be paid to those areas where industrialization did not take place. (Seminar)
Prerequisite: 9 hours of lower division History credit. HIST 224 and/or 225 recommended.

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. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 105 or 106
recommended.

HIST 408-4 Liberty and Authority in 19th Century Thought
An examination of political philosophies in their social and economic context. The experience of Britain as well as that of
continental Europe will be included. Students will be required to read from contemporary sources, in translation where necessary.
(Seminar) Prerequisite: 9 hours of lower division History credit. HIST 224 and 225 recommended.

HIST 410-4 History of Science, Technology and Everyday Life 1870-1950.
An examination of the ways in which, during the period 1870-1950, the routine experiences of life changed as a result of
innovations in science and technology. Areas for study will be selected from the following: medicine, pharmaceuticals, sanitary
reform, electrification, transport, materials, communications, psychology, biometrics and food production. The focus will be
largely, though not exclusively, on the British and North American experience. (Seminar) Prerequisite: 9 hours of lower division
History or Science credit. Recommended: HIST 360 or 361.

HIST 411-4 Class and Gender in Modern Europe
This seminar will examine theories of class and gender as they apply to modern European social, economic and political history.
In certain semesters the emphasis may shift from class analysis to gender relations and women's history; but the interrelationship
of class and gender will always be considered. (Seminar) Prerequisites: 9 hours of lower division History credit. HIST 224 and
225 recommended.

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.
(Seminar) Prerequisite: 9 hours of lower division History credit. HIST 225 recommended.

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. (Seminar) Prerequisite: 9 hours of lower division History credit. Students are strongly recommended
to have taken one or more of the following courses: HIST 224, 229, 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. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 223, 224, 229
recommended.

HIST 417-4 Modern French Social 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 Revolution Tradition, or to society and culture in the Third, Fourth, and Fifth Republics,
HIST 418-4 Modern Spain and the Civil War
A survey of 20th century Spanish history with a special emphasis on the events of the 1930's, the Second Republic and the Civil War. International aspects will be considered but not stressed. (Seminar) Prerequisite: 9 hours of lower division History credit.

HIST 419-4 Modernization and Reform in Russia 1860-1930
A detailed examination of the impact of modernization in late Imperial and early Soviet Russia. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 227 and either 224 or 225 recommended.

HIST 420-4 The History of Russian Foreign Policy from Catherine the Great to Stalin
A detailed study of the conduct of Russian foreign policy from the late 18th century to the middle of the 20th century. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 227 and either 224 or 225 recommended.

HIST 423-4 Problems in the Diplomatic and Political History of Canada
Selected problems in the history of the Canadian constitution, Dominion-Provincial relations, Canadian politics, the Canadian military, and Canadian external affairs. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 101, 102 recommended.

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. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 101, 102 recommended.

HIST 425-4 Gender and History
This course will study historical changes in masculinity and femininity. It will examine the ways in which gender identities of women and men are formed and changed, and it will consider the influences of gender relationships upon politics, society and the economy. (Seminar) Prerequisites: 9 hours of lower division History credit.

HIST 426-4 Law and Society in Historical Perspective
An investigation of the social role of law, the courts, policing, crime and punishment from an historical perspective. (Seminar) Prerequisites: 9 hours of lower division History. PHIL 120 or 220 recommended.

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. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 101, 102 recommended.

HIST 430-4 New France
Social, cultural, intellectual, economic, military, and administrative aspects of New France. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 101, 102 recommended.

HIST 431-4 British North America, 1760-1850
The social and cultural life of British North America: religion, education, economic pursuits, social and humanitarian attitudes, politics, and English-French relations. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 101 recommended.

HIST 435-4 The Canadian Prairies
Selected problems in the social, economic and political development of the Canadian Prairies. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 101 and 102 recommended.

HIST 436-4 British Columbia
Selected problems in the social, cultural, economic and political development of British Columbia. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 101 and 102 recommended.
HIST 446-4 The Revolutionary and Early National Period in the United States
Selected topics may include the Revolutionary War Era; the American Enlightenment; the New Nation; American Diplomacy in the Formative Period. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 212 recommended.

HIST 450-4 The Era of the American Civil War
Examining the political, social, economic, and cultural elements that led to the break up of the American republic, the Civil War, and the problems involved in reconstructing the union. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 212 or 213 recommended. Students with credit for HIST 447 under the same topic may not take HIST 450 for further credit.

HIST 451-4 Innocence and Corruption in Nineteenth Century American Myth
That America was a new and different land and that Americans were to be a new breed of purified men and women was a controlling myth in the 19th Century. This seminar will examine the social and intellectual origins of this myth, the manner in which it was played out in the American consciousness, and its tragic demise. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 212 or 213 recommended. Students with credit for HIST 447 under the same topic may not take HIST 451 for further credit.

HIST 452-4 The US in the Progressive Era
The United States emerged as a modern industrial nation in the two decades before it entered World War I. This course will explore the implications of that development, focusing on such topics as the "city boss," the "new immigrants," the social justice movement, and the rise of organized labor. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 212 or 213 recommended. Students with credit for HIST 448 under the same topic may not take HIST 452 for further credit.

HIST 453-4 The US Between the Wars
An examination of how the US met the problems of prosperity in the 1920's and privation in the 1930's. Topics covered will include the emergence of a consumer society, prohibition, anti-evolutionism, economic collapse, the origins of the welfare state, and the rise of industrial unions. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 212 or 213 recommended. Students with credit for HIST 448 under the same topic may not take HIST 453 for further credit.

HIST 454-4 Gender and Sexuality in US History
This course will explore changing constructions of gender roles and sexuality in United States history. It will examine how prescribed norms have shaped definitions of acceptable and respectable behavior, and how these norms have been regulated over time. We shall also explore how gender and sexual relations have created and reflected power relations between men and women. Special emphasis will be placed on the nineteenth and twentieth centuries. (Seminar) Prerequisites: 9 hours of lower division History 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. (Seminar) Prerequisite: 9 hours of lower division History credit. One of the following is recommended: HIST 104, 208, 209, LAS 200.

HIST 459-4 Problems in the Political and Social History of 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. (Seminar) Prerequisite: 9 hours of lower division History credit. One of the following is recommended: HIST 104, 208, 209, LAS 200.

HIST 465-4 The Emergence of the Israelis and Palestinians in Historical Perspective
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. (Seminar) Prerequisite: 9 hours of lower division History credit. One of HIST 151, 249, 251, 350, 355, 354 or permission of the department.
HIST 467-4 Change and Revolution in Modern Egypt
An interpretive discussion of the course of modern Egyptian history. This may range from the advent to power of Muhammed Ali Pasha until recent times, or may focus on specific periods of revolutionary change. (Seminar) Prerequisite: 9 hours of lower division History credit. One of HIST 151, 249, 251, 350, 354, 355 or permission of the department.

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. (Seminar) Prerequisite: 9 hours of lower division History credit. One of the following is recommended: HIST 249 or 352.

HIST 470-0 Practicum III
This is the third semester of the Co-operative Education program. The work experience will be focused in a specialized area of the student's choice. Prerequisite: normally 90 semester hours (including HIST 370 and 375) with a minimum CGPA of 2.75. Students should apply to the Co-op Co-ordinator one semester in advance.

HIST 473-4 The Making of South African Society
An examination of the way in which South African society evolved before the union of 1910. Particular attention will be paid to the problem of race relations in the Four Pre Union South African states. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 146, 231. HIST 348 recommended.

HIST 475-0 Practicum IV
This is the fourth semester 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. Prerequisite: normally 105 semester hours (including HIST 370, 375 and 470) with a minimum CGPA of 2.75. Students should apply to the Co-op Co-ordinator one semester in advance.

HIST 481-4 British India
An examination of the British community in India set against the background of British attitudes to India since the late 18th century. (Seminar) Prerequisite: 9 hours of lower division History credit.

HIST 482-4 Emergent African Nationalism
An examination of myths and realities in the emergence of mass movements, principally in Kenya and mainland Tanzania between World War II and independence. (Seminar) Prerequisite: 9 hours of lower division History credit. HIST 344 recommended.

HIST 483-4 The Struggle for Identity in Sub-Saharan Africa
Selected topics in the history of an African state. (Seminar) Prerequisite: 9 hours of lower division History credit.

HIST 484-4 History of Women in North America
An examination of women at home, women in the labor force, and women and politics in the private and public spheres from 1830 to the present. (Distance Education) Prerequisite: 9 hours of lower division History credit.

HIST 485-4 Studies in History I
Special topics. (Seminar) Prerequisite: 9 hours of lower division History credit.

HIST 486-4 Studies in History II
Special topics. (Seminar) Prerequisite: 9 hours of lower division History credit.

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. (Seminar) Prerequisite: 9 hours of lower division History credit. At least three upper division courses in History recommended.
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: 9 hours of lower division History credit. At least three upper division courses in History recommended.

Honors Courses (Open Only To Honors Students)

HIST 305-2 Honors Tutorial
Open only to honors students, this tutorial will be taken in conjunction with HIST 300. Readings in the philosophy of history and historiography will be discussed. (Tutorial) Prerequisite: admission to the honors program in History.

HIST 495-4 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. (Seminar) Prerequisite: 9 hours of lower division History credit.

HIST 498-8 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: 9 hours of lower division History credit.

Humanities Program
Location: 6180 Academic Quadrangle
Telephone: 778.782.4509
Co-ordinator: M.A. Stouck BA (McM), MA, PhD (Tor)

Professors
P.E. Dutton BA (WOnt), MA, PhD (Tor), MSL, MSD (PIMS), joint appointment with History
J. Zaslove BA (Case W Reserve), PhD (Wash), joint appointment with English, Director of Institute for the Humanities

Associate Professors
S. Duguid BA (Ill), MA, PhD (S Fraser), joint appointment with Graduate Liberal Studies Program
W.B. McDermott BA (Texas College of Arts and Industries), MA (Baylor), PhD (Wash)
M. Selman BA, PhD (Br Col)

Assistant Professor
T. Yu BA (Hong Kong), MA, PhD (Br Col), joint appointment with Interdisciplinary Studies

Lecturer
D. Grayston BA (Br Col), MDiv (Gen'l Theological Seminary, NY), ThM, PhD (Tor)

Instructor
L. Armstrong BA, MA (Dal), MDiv, MA (Tor), joint appointment with History

Steering Committee
L. Armstrong, History/Humanities
S. Duguid, Humanities/Graduate Liberal Studies Program
P. Dutton, History/Humanities
D. Grayston, Humanities
C. Liotta, Alumni Relations
W.B. McDermott, Humanities
G. Merler, French
A. Paranjpe, Psychology
S. Roberts, English
M.A. Stouck, English
J. Tietz, Philosophy
The Humanities is the study of 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 the Humanities raises critical questions about the achievements and controversies associated with the concept of civilization itself. Students will be encouraged to examine the knowledge and ideas central to the Humanities and to integrate these concerns with their degree programs in original and critical ways.

The advisory system is essential to the programs. Student must get approval and advice from the co-ordinator and/or advisor before being admitted.

Undergraduate courses
Course descriptions for all Humanities undergraduate courses.

Joint Major in English and Humanities
This joint major is designed for those interested in exploring the various relationships between the study of English literature and Humanities.

Interested students must plan their program in consultation with advisors in each department.

Lower Division Requirements

English
Students must complete the lower division requirements of the English major program (refer to the Department of English section).

Humanities
Students must complete 15 semester hours of credit including the following.

all of
HUM 102-3 Classical Mythology
HUM 201-3 Great Texts in the Humanities I
HUM 202-3 Great Texts in the Humanities II
and two further Humanities courses at the lower division.

Upper Division Requirements

English
Students must complete 20 semester hours of credit in upper division English courses, as follows.

one of
ENGL 300-4 Old English I: Introductory Old English
ENGL 301-4 Old English II: Advanced Old English
ENGL 304-4 Topics in Medieval Literature
ENGL 306-4 Chaucer
ENGL 308-4 Tudor Poetry and Prose

one of
ENGL 310-4 Elizabethan and Jacobean Drama
ENGL 312-4 Shakespeare
ENGL 314-4 Seventeenth Century Prose and Verse
ENGL 316-4 Milton
ENGL 318-4 Major Authors of the Restoration and Eighteenth Century: Dryden Swift, Pope, Johnson, Blake
ENGL 320-4 Topics in Literature and Culture in the Restoration and Eighteenth Century
ENGL 322-4 Eighteenth Century Novelists

The remainder may be chosen from anywhere among the series ENGL 300-387 and ENGL 441-446. A CGPA of 2.0 in English must be maintained.

Humanities
Students must complete 21 semester hours (seven courses) or 20 semester hours (five courses plus HUM 400).

Recommended
HUM 305-3 Medieval Studies
HUM 307-3 Carolingian Civilization
HUM 311-3 Humanists and Humanism in the Italian Renaissance
HUM 312-3 Renaissance Studies
HUM 321-3 The Humanities and Critical Thinking

Joint Major in History and Humanities
This joint major is designed for those interested in exploring the various relationships between the two disciplines. Interested students must plan their program in consultation with advisors in each department.

Lower Division Requirements

History
Students must complete the lower division requirements of the History major program (refer to the Department of History section).

Humanities
Students must complete 15 semester hours of credit including the following.
all of
HUM 102-3 Classical Mythology
HUM 201-3 Great Texts in the Humanities I
HUM 202-3 Great Texts in the Humanities II
and two further Humanities courses at the lower division.

Upper Division Requirements

History
Students must complete the upper division requirements of the History major program (refer to the Department of History section).

Humanities
Students must complete 21 semester hours (seven courses) or 20 semester hours (five courses plus HUM 400).

Recommended
HUM 302-3 The Golden Age of Greece: An Integrated Society
HUM 303-3 The Latin Humanist Tradition
HUM 305-3 Medieval Studies
HUM 307-3 Carolingian Civilization
HUM 311-3 Humanists and Humanism in the Italian Renaissance
HUM 312-3 Renaissance Studies

Joint Major in Philosophy and Humanities
This joint major is designed for those interested in exploring the various relationships between the two disciplines. Interested students must plan their program in consultation with advisors in each department.
Lower Division Requirements

Philosophy
Students must complete the following 12 semester hours.

_all of_
PHIL 100-3 Knowledge and Reality
PHIL 120-3 Facts and Values
PHIL 203-3 Metaphysics

_and one of_
PHIL 150-3 History of Philosophy I
PHIL 151-3 History of Philosophy II

Humanities
Students must complete 15 semester hours including the following.

_all of_
HUM 102-3 Classical Mythology
HUM 201-3 Great Texts in the Humanities I
HUM 202-3 Great Texts in the Humanities II
and two further Humanities courses at the lower division.

Upper Division Requirements

Philosophy
Students must complete 21 semester hours which must include PHIL 301.

Humanities
Students must complete 21 semester hours (seven courses) or 20 semester hours (five courses plus HUM 400).

Recommended
HUM 320-3 The Humanities and Philosophy
HUM 321-3 The Humanities and Critical Thinking

Minor Program

Lower Division Requirements
Students must complete three lower division Humanities courses for a total of nine semester hours. Because Humanities study requires familiarity with philosophical concepts and an awareness of the past, it is recommended that students take one of HIST 105/106, PHIL 150 or 151 in their program. One of these courses may be counted in lieu of one lower division Humanities course.

Upper Division Requirements
Students must complete 14-15 upper division Humanities credit comprised of five 3-credit or three 3-credit upper division Humanities courses plus HUM 400. Students with a strong interest in completing an individual research project are encouraged to include HUM 400 in their program.

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. Students must complete lower and upper division requirements as set out below.
**Lower Division Requirements**

Students must complete 18 semester hours of credit which must include a minimum of three lower division Humanities courses. Because the study of the Humanities requires familiarity with philosophical concepts and an awareness of the past, students must also include the following.

*at least one of*

HIST 105-3 Western Civilization from the Ancient World to the Reformation Era  
HIST 106-3 Western Civilization from the Reformation Era to the 20th Century

*and at least one of*

PHIL 150-3 History of Philosophy I  
PHIL 151-3 History of Philosophy II

The remaining three credits can be chosen from the list above or from the lower division Humanities course list.

**Upper Division Requirements**

Requirements are the same as for the minor program (see above).

**Post Baccalaureate Diploma in Humanities**

A Post Baccalaureate Diploma program in Humanities is available for students who have already completed a Bachelors degree.

For information about the Post Baccalaureate Diploma program general regulations, refer to Continuing Studies.

**Program Requirements**

Students must successfully complete an approved program of 30 hours of upper division or graduate courses including at least 14 credits in Humanities courses. Students should include HUM 400 in their program.

The remaining 16 semester hours are selected in consultation with an advisor in the subject or discipline which most closely fits the goals of the student.

For more information about the program contact the Humanities advisor.

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**Humanities Undergraduate Courses**

**Faculty of Arts**

HUM 102-3 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. (Lecture/Tutorial)

HUM 151-3 Ancient Greek I  
An introduction to the classical Greek language. Students who have taken GRE 100 cannot take this course for further credit.

HUM 152-3 Ancient Greek II  
The continuation of Ancient Greek I. Prerequisite: HUM 151, or permission of the instructor. Students who have taken GRE 101 cannot take this course for further credit.

HUM 161-3 Latin I  
An introduction to the Latin language. Students who have taken LATN 100 cannot take this course for further credit.

HUM 162-3 Latin II  
The continuation of Latin I. Prerequisite: HUM 161 or permission of the instructor. Students who have taken LATN 101 cannot take this course for further credit.
HUM 201-3 Great Texts in the Humanities I
This course is 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. (Lecture/Tutorial) HIST 105 or PHIL 150 is recommended.

HUM 202-3 Great Texts in the Humanities II
This course is 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. (Lecture/Tutorial) HIST 106 or PHIL 151 is recommended.

HUM 227-3 On the Seriousness of the Future
An exploration of the central controversies concerning the alleged seriousness of the future. (Lecture/Tutorial) Students who have taken GS 227-3 cannot take this course for further credit.

HUM 230-3 Introduction to Religious Studies
The examination of religion as expressed in the religious and humanistic traditions available through the investigation of primary textual sources. A critical and appreciative approach to religious phenomena will be emphasized through the theological, literary, historical, philosophical and behavioral backgrounds that influence our understanding of religion. (Lecture/Tutorial)

HUM 302-3 The Golden Age of Greece: An Integrated Society
The Fifth Century BC in Athens remains a period unique in the record of human achievement. During the space of less than a century, virtually all the major humanistic fields were either initiated or else received significant new impetus. This course seeks to integrate the remarkable achievements of this 'Golden Age' into one coherent examination of its elements, using slides or photographs for the artistic and architectural material and translated original texts as the basis of discussion. (Seminar) Recommended: 18 hours of humanities related courses offered by the Faculty of Arts at the lower division.

HUM 303-3 The Latin Humanist Tradition
Study of the major writings of Latin authors such as Plautus, Virgil, Seneca, Cicero, Augustine, and John of Salisbury. (Lecture/Seminar) Recommended: 18 hours of humanities related courses offered by the Faculty of Arts at the lower division.

HUM 305-3 Medieval Studies
A detailed interdisciplinary analysis of a selected topic, issue, or personality in the Middle Ages. (Seminar) Recommended: 18 hours of humanities related courses offered by the Faculty of Arts at the lower division.

HUM 307-3 Carolingian Civilization
A focused interdisciplinary study of the Carolingian civilization achieved in early medieval Europe under Charlemagne and his family. (Seminar) Recommended: 18 hours of humanities related courses offered by the Faculty of Arts at the lower division.

HUM 311-3 Humanists and Humanism in the Italian Renaissance
A study of the major writings, cultural milieu, and influence of the humanist movement of the Italian Renaissance. (Seminar) Recommended: 18 hours of Humanities related courses offered by the Faculty of Arts at the lower division.

HUM 312-3 Renaissance Studies
A detailed interdisciplinary analysis of a selected topic, issue, or personality from the Italian and/or Northern Renaissance. (Seminar) Recommended: 18 hours of Humanities related courses offered by the Faculty of Arts at the lower division.

HUM 320-3 The Humanities and Philosophy
How does the study of the humanities, with its emphasis on expression, belief, and tradition, present the central concepts of Western Civilization in a way which cannot be understood simply as history or sociology? If different cultures, or different historical periods within a culture produce different interpretations of human value and different images of humanity, how are they to be reconciled and related to one another? These questions will be discussed through the integrated study of history,
literature, arts and philosophy. (Seminar) Recommended: 18 hours of humanities related courses offered by the Faculty of Arts at the lower division. Students who have taken this course as HUM 306 cannot take this course for further credit.

HUM 321-3 The Humanities and Critical Thinking
The humanities have traditionally been associated with "the best that has been thought and said" throughout the history of civilization. But from its beginnings Western Civilization has also been characterized by the restless criticism of its own ideals. This course will compare and contrast diverse critical traditions within Western culture, the attempts of great artists and thinkers to break with tradition, and the subsequent creation of new ideas and forms of experience and expression. (Seminar) Recommended: 18 hours of humanities related courses offered by the Faculty of Arts at the lower division. Students who have taken this course as HUM 308 cannot take this course for further credit.

HUM 325-3 Humanity and the Natural World
Concern for a seemingly deteriorating natural environment has made the interaction of humans with the other-than-human natural world a central topic of humanistic, scientific, political, and ideological discourse. Using classic and contemporary sources, this course examines aspects of this discourse, including: human communities and nature; individual humans immersed in nature; and nature and human habitat. (Seminar) Recommended: 18 hours of Humanities related courses offered by the Faculty of Arts at the lower division.

HUM 327-3 The Study of the Future
An exploration of some of the questions, issues, and problems that arise when we attempt to understand, to predict, or to control various aspects of the future. (Lecture/Tutorial) Recommended: 18 hours of Humanities related courses offered by the Faculty of Arts at the lower division. Students who have taken GS 427-5 cannot take this course for further credit.

HUM 330-3 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. (Seminar) Recommended: 18 hours of humanities related courses offered by the Faculty of Arts at the lower division. Students with credit for HUM 304 may not take this course for further credit.

HUM 340-3 Great Cities in Their Time
This course will explore the cultural and intellectual accomplishments of great cities that achieved prominence in their own time and had a substantial impact and influence on human civilization. We shall explore the political, social, religious, and cultural factors that help to explain a city's significance and will closely investigate the achievements of its citizens. (Seminar) Recommended: 18 hours of Humanities related courses offered by the Faculty of Arts at the lower division.

HUM 375-3 The Woodsworth Seminar
A special topic in the Humanities to be offered by the Woodsworth Chair. (Seminar) Recommended: 18 hours of humanities related courses offered by the Faculty of Arts at the lower division.

HUM 381-3 Selected Topics in the Humanities I
(Seminar) Recommended: 18 hours of humanities related courses offered by the Faculty of Arts at the lower division.

HUM 382-3 Selected Topics in the Humanities II
(Seminar) Recommended: 18 hours of humanities related courses offered by the Faculty of Arts at the lower division.

HUM 390-3 Directed Studies in Humanities
Prerequisites: two of any 300 level humanities courses or permission of the co-ordinator plus permission of instructor.

HUM 400-5 Humanities Study Project
A substantial research and writing project culminating in the completion of an essay on a humanities topic. Prerequisites: completion of 75 semester hours of credit which should include at least two 300 level Humanities courses; the signature of a faculty member who is willing to supervise the project; approval of the Humanities Co-ordinator.
**Department of Linguistics**

Location: 9201 Classroom Complex  
Telephone: 778.782.4585  
Chair: R. Saunders BA (Penn State), AM, PhD (Brown)

**Professors Emeriti**  
G.L. Bursill-Hall MA (Camb), PhD (Lond)  
J.A. Foley BA (Nebraska), PhD (MIT)  
B.E. Newton MA (Oxf)

**Professors**  
H. Hammerly BA (Columbia Union Coll), PhD (Texas)  
N.J. Lincoln BA (Lond), MA (Alt), PhD (C'nell)  
E.W. Roberts BA (Wales), MA, PhD (Camb)  
R. Saunders BA (Penn State), AM, PhD (Brown), Chair of Department

**Associate Professors**  
R.C. DeArmond BA (Wash), MA, PhD (Chic)  
D.B. Gerdts BA (Missouri), MA (Br Col), PhD (Calif)  
T.A. Perry BA (Wabash), MA, PhD (Indiana)

**Assistant Professors**  
N. Hedberg BA, PhD (Minn)  
P. McFetridge BA, MA, PhD (S Fraser)  
Z. McRobbie PhD (Eotvos Lorand, Budapest), PhD (Manit)  
M. Munro BEd, MSc, PhD (Alt)

**Associated Faculty**  
S. Davis, Philosophy  
F. Popowich, Computing Science  
J. Sosa, Spanish and Latin American Studies  
W. Turnbull, Psychology  
J. Walls, Communication

**Advisor**  
Ms. G.R. Carlson, 9200 Classroom Complex, 778.782.5739

The Department of Linguistics offers honors, major and minor programs in Linguistics. The department also participates in the interdisciplinary programs of the Cognitive Science program.

Program requirements for the honors, major and minor programs are listed below. Students pursuing a Linguistics program are urged to seek advice early in their programs from the department. Full course descriptions are given in the Undergraduate Courses.

**Undergraduate courses**  
Course descriptions for all Linguistics undergraduate courses.

**Courses of Interest to Students Outside the Department**  
The courses listed below are general interest courses designed to give insights into language and linguistics. None of these courses has prerequisites.

- LING 100-3 Communication and Language  
- LING 110-3 The Wonder of Words  
- LING 220-3 Introduction to Linguistics  
- LING 260-3 Language, Culture, and Society
The following courses, although they carry prerequisites, may be of interest to students with particular language specialties (when they focus on the language of their interest).

LING 231-3 Introduction to an Amerindian Language I
LING 232-3 Introduction to an Amerindian Language II
LING 431-3 Language Structures I
LING 432-3 Language Structures II

Languages selected as a focus for these courses will be indicated in the Registration Instructions and Timetable for the semester in which the course will be offered.

**Major Program**

**Lower Division Requirements**
LING 130-3 Practical Phonetics
LING 220-3 Introduction to Linguistics
LING 221-3 Introduction to Phonology
LING 222-3 Introduction to Syntax

plus three additional semester hours in 200 level Linguistics courses

**Upper Division Requirements**
LING 321-3 Phonology
LING 322-3 Syntax

*plus any two of*
LING 323-3 Morphology
LING 324-3 Semantics
LING 330-3 Phonetics

plus 18 additional semester hours in upper division Linguistics courses. Approved substitutes from outside the department may be counted for up to three of those semester hours.

**Honors Program**

**Lower Division Requirements**
LING 130-3 Practical Phonetics
LING 220-3 Introduction to Linguistics
LING 221-3 Introduction to Phonology
LING 222-3 Introduction to Syntax

plus three additional credit hours in 200 level Linguistics courses

**Upper Division Requirements**
LING 321-3 Phonology
LING 322-3 Syntax
LING 490-3 Honors Essay

*plus any two of*
LING 323-3 Morphology
LING 324-3 Semantics
LING 330-3 Phonetics
plus 35 additional hours chosen from upper division Linguistics courses, or approved substitutes from outside the department for up to nine of those semester hours.

**Minor Program**

**Lower Division Requirements**
LING 130-3 Practical Phonetics
LING 220-3 Introduction to Linguistics

plus nine additional semester hours in 200 level Linguistics courses

**Upper Division Requirements**
Students must complete 15 semester hours of upper division Linguistics courses.

*Note: Full course descriptions are given in the Undergraduate Courses.*

**Extended Minor Program**
An extended minor 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.

**Certificate in First Nations Language Proficiency**
This certificate program is intended for students who wish to acquire conversational and literacy skills in a particular First Nations language for purposes of teaching this language in elementary or secondary schools or to enhance their knowledge of a First Nations language for cultural reasons or professional objectives.

The certificate consists of 27 credit hours of course work. At least 12 of these credit hours must be earned by completing courses in the First Nations language itself.

The certificate program can be taken on a full time or part time basis. Advanced placement through course challenge to a maximum of nine credit hours is possible for individuals who are already fluent in their language. Credit may be applied to a specific language and can be achieved by examination from an instructor in that language with the approval of the department.

**Program Requirements**
Students must complete or achieve equivalent credit for the following courses.

LING 130-3 Practical Phonetics
LING 220-3 Introduction to Linguistics
* LING 231-3 Introduction to an Amerindian Language I
* LING 232-3 Introduction to an Amerindian 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 credit hours selected from among the following courses.

LING 241-3 Languages of the World
LING 260-3 Language, Culture and Society
LING 360-3 Linguistics and Language Teaching: Theory
LING 361-3 Linguistics and Language Teaching: Practice
LING 430-3 Native American Languages
* LING 431-3 Language Structures I
* LING 432-3 Language Structures II

*These courses may only be counted towards a certificate if the subject matter of each is the same First Nations language.*
Certificate in Teaching ESL Linguistics
The Department offers a Certificate in Teaching ESL Linguistics for students preparing to teach English as a Second Language. While the certificate by itself is not a specific employment credential, it constitutes preparation for advanced study in applied Linguistics and ESL, and, when combined with appropriate professional certification, provides the specialized linguistic knowledge necessary for teaching English language skills in an environment in which some or all of the students are not native speakers of English.

The program will normally take four to five semesters to complete. The certificate may be earned concurrently with a major or minor in Linguistics.

Monolingual students who have never studied any language other than English are strongly advised to take at least two courses (six semester hours) in a language other than English.

Program Requirements
The program requires successful completion of 31 semester hours as set out below, with a minimum grade point average of 2.0 calculated on the basis of grades in the specified required courses.

Lower Division
Required courses
LING 110-3 The Wonder of Words
LING 130-3 Practical Phonetics
LING 220-3 Introduction to Linguistics
LING 222-3 Introduction to Syntax
LING 250-3 Language Acquisition

(15 semester hours)

Recommended courses
EDUC 220-3 Introduction to Education Psychology
LING 221-3 Introduction to Phonology
LING 260-3 Language, Culture, and Society

Upper Division
Required courses
EDUC 467-4 Curriculum and Instruction in Teaching English as a Second Language
LING 360-3 Linguistics and Language Teaching: Theory
LING 361-3 Linguistics and Language Teaching: Practice
LING 362-3 English as a Second Language: Theory
LING 363-3 English as a Second Language: Practice

(16 semester hours)

Recommended courses
EDUC 468-4 Recent Advances in the Teaching of English as a Second Language

Post Baccalaureate Diploma in Teaching English as a Second Language
The Department of Linguistics and the Faculty of Education jointly offer this program. Students should apply to the departmental advisor for admission to the Diploma program and should also seek admission to the University separately. Applicants will be admitted by the joint steering committee made up of members of the Linguistics Department and the Faculty of Education under the following general requirements.

- completion of a Bachelors degree
• demonstrated knowledge of spoken and written English (see English Language Requirements in the Admission and Readmission section).
• An undergraduate concentration in one or more related disciplines such as Linguistics, Education, English or Psychology. Completion of the Certificate in ESL Linguistics or an equivalent preparation is accepted as fulfilling this requirement. Students may be admitted on the condition that they take LING 310-6 Intensive Survey of Linguistic Analysis, in addition to the general requirements of the program.
• some academic training or demonstrated ability in a language other than English

Course Requirements
Students are required to complete a minimum of 31 credit hours chosen from the following three areas: Linguistics, Education, and Individual and Social Development. The requirements are as follows.

Linguistics
The program requires an understanding of the general principles of linguistic theory and analysis, as well as the linguistic structure of the English language, and acquaintance with a wide range of structures typical of the languages of English learners.

Students are required to take a total of 12 credit hours in upper division Linguistics courses, consisting of the following.

any two of
LING 321-3 Phonology
LING 322-3 Syntax
LING 323-3 Morphology
LING 324-3 Semantics
LING 330-3 Phonetic

(6 credit hours)

Note: Students whose undergraduate record includes at least 12 credit hours from the above list or their equivalents must select approved substitutes from among 400 level Linguistics courses to fulfill the requirement of six credit hours in this section.

plus any two of
LING 360-3 Linguistics and Language Teaching: Theory
LING 361-3 Linguistics and Language Teaching: Practice
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 credit hours)

Note: Students who have already received credit for courses in this list through previous programs may not take them for further credit.

Education
Students in the program should be conversant with the principles of language pedagogy and be able to apply these as needed to various classroom situations; they should also have an understanding of the principles of testing and assessment and be able to apply these in classroom settings. Students are further required to have practical experience which is designed to develop classroom skills specific to teaching English to non-native speakers.

Students are required to complete the following courses.
all 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 credit hours)

Note: Only students who have a current teaching placement should enroll in EDUC 470. In exceptional circumstances, alternative arrangements may be made after consultation with the steering committee.

plus 8-12 credit hours chosen from
EDUC 325-3 Testing in Schools
EDUC 341-3 Literacy, Education and Culture
EDUC 342-3 Contemporary Approaches to Literacy Instruction
EDUC 367-4 Integrating ESL Learners in Different School Subjects
EDUC 422-4 Learning Disabilities
EDUC 424-4 Learning Disabilities: Laboratory
EDUC 468-4 Recent Advances in the Teaching of English as a Second Language

(8-12 credit hours)

Note: Students who have already received credit for courses in this list through previous programs may not take them again for further credit. Students who have prior credit for EDUC 467 or the equivalent will be required to select an alternative to that course 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 are required to 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 409-3 Sociolinguistics
SA 400-4 Canadian Ethnic Minorities

(3-4 credit hours)

Linguistics Undergraduate Courses

Faculty of Arts

LING 100-3 Communication and Language
A non-theoretical approach to the study of language using examples from a variety of languages. (Lecture)

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. (Lecture/Tutorial)

LING 130-3 Practical Phonetics
Practical training in the description of sounds used in language. (Seminar)
LING 220-3 Introduction to Linguistics
An introduction to linguistic analysis. (Lecture/Tutorial) Students with credit for LING 240 may not take this course for further credit.

LING 221-3 Introduction to Phonology
The principles of phonological analysis. (Lecture) Prerequisites: LING 130, 220.

LING 222-3 Introduction to Syntax
The principles of syntactic analysis. (Lecture) Prerequisite: LING 220.

LING 231-3 Introduction to an Amerindian 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. (Tutorial) Prerequisite: LING 130. Students who have taken LING 431 in semester 90-3 may not take this course for further credit.

LING 232-3 Introduction to an Amerindian 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. (Tutorial) Prerequisite: LING 231 in the same language. Students who have taken LING 432 in semester 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. (Lecture) Prerequisite: LING 220.

LING 260-3 Language, Culture, and Society
An introduction to language in its social and cultural dimensions. (Lecture/Tutorial)

LING 310-6 Intensive Survey of Linguistic Analysis
An in-depth examination of core areas of linguistic analysis, including extensive practice with representative linguistic data from a variety of languages. (Lecture/Tutorial) This course may not be taken for credit toward a major, minor or honors program in Linguistics.

LING 321-3 Phonology
An overview of theoretical principles in phonology. (Lecture/Tutorial) 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. (Lecture/Tutorial) Prerequisite: LING 222 or 310.

LING 323-3 Morphology
Word structure in natural languages and its relationship to phonological and syntactic levels of grammar. (Lecture) Prerequisites: LING 221, 222 or 310.

LING 324-3 Semantics
The basics of word meaning, including: sense and reference, componential analysis, color and kinship terminology, semantic universals, synonymy and antonymy, one and two term predicates, lexical decomposition, presupposition, and selection restrictions. (Lecture/Tutorial) Prerequisite: LING 222 or 310.

LING 330-3 Phonetics
A survey of methods of speech sound description and transcription. (Lecture/Tutorial) 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. (Tutorial) 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. (Tutorial) Prerequisite: LING 331 or equivalent credit in the same language.

LING 350-3 Language Acquisition
Introduction to the study of language acquisition from the point of view of linguistic structure. (Lecture/Tutorial) Prerequisites: LING 130, 220. Students who have taken LING 250 may not take this course for further credit.

LING 360-3 Linguistics and Language Teaching: Theory
Theoretical aspects of second language learning. (Lecture/Tutorial) Prerequisite: LING 130, 220; or 310.

LING 361-3 Linguistics and Language Teaching: Practice
Evaluation, preparation and presentation of second language teaching materials based on sound linguistic principles, with special reference to theoretical issues introduced in LING 360. (Lecture/Tutorial) Prerequisite: LING 360 or concurrent registration therein. Familiarity with a language other than English is required.

LING 362-3 English as a Second Language: Theory
Application of linguistic principles to the teaching of English as a second language. (Lecture/Tutorial) Prerequisites: LING 130, 220 or 310. Students with experience teaching English as an additional language may be exempted from these prerequisites with the permission of the instructor.

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. (Lecture/Laboratory) Prerequisite: LING 362 or concurrent registration therein.

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. (Lecture/Tutorial) Prerequisite: LING 322. Recommended: PHIL 210

LING 401-3 Advanced Phonetics
Advanced training in speech sound description and analysis in the impressionistic and instrumental modes. (Lecture/Tutorial/Laboratory) Prerequisite: LING 330.

LING 403-3 Advanced Phonology
Detailed study of the formulation of phonological theories and their testing with natural language data. (Lecture/Tutorial) Prerequisite: LING 321.

LING 405-3 Advanced Syntax
In-depth investigation of theoretical frameworks for syntactic description of natural languages. (Lecture/Tutorial) Prerequisite: LING 322.

LING 406-3 Advanced Semantics
This course will examine aspects of sentence meaning, including: truth conditions and their derivation from lexical and syntactic information; meaning-changing transformations; quantifier interchange; specificity and its relation to quantifier scope; opaque contexts; the role of meaning postulates; pragmatic aspects of meaning; performative sentences. (Lecture) Prerequisites: LING 322, 324. Recommended: PHIL 210.
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. (Lecture) Prerequisites: LING 321, 322 and 323.

LING 408-3 Field Linguistics
The investigation and description of an unfamiliar language. (Lecture/Seminar) Prerequisites: LING 221 and 222; or 310.

LING 409-3 Sociolinguistics
A systematic approach to the study of linguistic variation in different areal, social, and cultural settings. (Lecture) Prerequisites: LING 220 or 310, 260.

LING 423-3 Advanced Morphology
Principles of morphological theory and a survey of current research on word structure. (Lecture/Tutorial) Prerequisites: LING 321, 322, 323.

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. (Seminar) Prerequisites: LING 221 and 222; or 310.

LING 431-3 Language Structures I
Detailed examination of the structure of a selected language. (Seminar) Prerequisites: LING 221 and 222; or 310.

LING 432-3 Language Structures II
Detailed examination of the structure of a selected language. (Seminar) Prerequisites: LING 221 and 222; or 310.

Note: This course may be a continuation of LING 431, or may be independent of it (see course outlines for the semesters offered).

LING 440-3 History and Philosophy of Linguistics
Historical and ontological development of linguistic concepts; issues in the philosophy of science pertaining to linguistic theory; the source of linguistic ideas in philosophical theories and their place in intellectual history. (Lecture/Tutorial) Prerequisites: LING 221 and 222; or 310.

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. (Lecture) Prerequisites: LING 221 and 222; or 310.

LING 480-3 Topics in Linguistics I
Investigation of a selected area of linguistic research. (Seminar) Prerequisites: 12 credit hours of upper division linguistics courses.

LING 481-3 Topics in Linguistics II
Investigation of a selected area of linguistic research. (Seminar) Prerequisite: 12 credit hours of upper division linguistics courses. Note: May be taken without LING 480.

LING 490-3 Honors Essay
Topic of a specific nature to be agreed upon by the student and a particular faculty member. (Seminar) Prerequisite: a minimum of 35 hours of upper division Linguistic courses counting toward the honors degree.
Mathematics Program
Location: K10512 Shrum Science Centre
Telephone: 778.782.3331/3332

Information on advisors and faculty members is in the Department of Mathematics and Statistics section in the Faculty of Science. Course descriptions and prerequisites are in the Mathematics; Statistics; and Mathematics and Computing (MACM) sections of the Undergraduate Courses.

The Department of Mathematics and Statistics offers a program of study within the Faculty of Arts leading to the degree of Bachelor of Arts with a major or honors in Mathematics. Students interested in a Bachelor of Science degree in Mathematics should refer to Faculty of Science.

Requirements for the Bachelor of Arts in Mathematics are set out below.

Undergraduate courses
Information on MATH and STAT undergraduate courses.

Prerequisite Grade Requirement
Students must obtain a grade of C- or higher in Mathematics and Statistics courses. They normally will not be permitted to enroll in any Mathematics or Statistics course for which a D grade or lower was obtained in any prerequisite.

General Requirements
Students planning to complete a Bachelor of Arts with a major or honors in Mathematics must satisfy the Faculty of Arts requirements.

Major
A Bachelor of Arts with a major in Mathematics requires completion of 120 semester hours, of which at least 65 semester hours must be taken within the Faculty of Arts and the Department of Mathematics and Statistics. See general regulations in the Faculty of Arts section.

Honors
A Bachelor of Arts with honors in Mathematics requires 132 hours, of which at least 65 must be taken within the Faculty of Arts and Department of Mathematics and Statistics. See general regulations in the Faculty of Arts section.

Minor
Requirements for students completing a minor program in Mathematics are listed under Department of Mathematics and Statistics, Faculty of Science.

Lower Division Requirements

Major and Honors
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 242-3 Introduction to Analysis
MATH 251-3 Calculus III
MATH 252-3 Vector Calculus

plus either three additional hours in lower division Mathematics or Statistics courses (MATH 100, 110, and 190 may not be included) or Computing Science (CMPT) 103 or 102 or 101. This requirement would normally be met by the end of the fourth level.

Note: Students who have been, or who have intended to be, major or honors students in Biological Sciences and who have satisfactorily completed MATH 154 or 155 will not take MATH 151 or 152 respectively.
Students who have been, or who have intended to be, major or honors students in the social sciences and who have satisfactorily completed MATH 157, or 158, will not take MATH 151 or 152 respectively.

- A minimum of 30 semester hours must be completed from outside the Department of Mathematics and Statistics. These courses must be taken from at least five departments outside the major or honors department. No more than nine credit hours from any one department may be counted towards these 30 semester hours. See Faculty of Arts Breadth Requirements for a listing of departments.

**Upper Division Requirements**

**Major**

At least 45 semester hours in upper division courses of which at least 30 must be in upper division Mathematics, Statistics or Mathematics/Computing Science; Mathematics majors will be required to take at least three 400 division Mathematics, Statistics or Mathematics/Computing Science courses, none of which may be a directed studies, job practicum or honors essay course. Neither STAT 301 nor 302 may be counted as part of the 30 semester hours.

**Note:** PHYS 413 may be considered a Mathematics course in this case.

**Honors**

At least 60 semester hours in upper division courses, of which at least 50 must be in upper division Mathematics, Statistics or Mathematics/Computing Science; Mathematics honors students require at least five 400 division Mathematics, Statistics or Mathematics/Computing Science courses, none of which may be a directed studies, job practicum or honors essay course. Neither STAT 301 nor 302 may not be counted as part of the 50 semester hours.

**Note:** PHYS 413-3 may be considered a Mathematics course in this case.

**Statistics Major and Honors Options**

Students majoring or taking honors in Mathematics may choose to follow the options in Statistics. Students interested in taking a minor under the Statistics option should see the requirements under the Department of Mathematics and Statistics, Faculty of Science. The BA degree in Mathematics using the Statistics option is subject to the general regulations of the Faculty of Arts.

Students following these options will be required by the Department of Mathematics and Statistics to obtain credit for the following courses:

1. **Lower Division Mathematics:** MATH 151 (or 154 or 157), 152 (or 155 or 158), 232, 242, 251, and 252
2. **Lower Division Statistics:** STAT 270 and 280
3. **Lower Division Computing:** CMPT 101 or 102 or 103, or equivalent evidence of competence in computer programming
4. **Upper Division Mathematics/Computing:** MACM 316
5. **Upper Division Probability and Statistics:** STAT 330, 350, 450, and at least three of STAT 402, 410, 420, 430, 440 and 460
6. **Upper Division Auxiliary Concentration:** At least 15 upper division semester hours in some specific field other than probability and statistics, mathematics, or computing science. These courses are to be approved by a departmental advisor.
7. **In addition, faculty requirements stipulate that at least three other upper division courses be taken in Mathematics, Statistics, Actuarial Mathematics, or Mathematics/Computing Science. Students are encouraged to consult a departmental advisor before selecting these courses.**

**Honors Option in Statistics**

In addition to requirements (1) through (6) for a major, candidates for an honors degree in Mathematics with the statistics option will be required to obtain credit for MATH 320, 322, 426, and 438, all of the courses listed under (5) above, and three additional upper division courses labelled MATH, STAT, or MACM.
Statistics Minor Option
Candidates for a minor in Mathematics and Statistics with the statistics option are subject to the general regulations of the faculty in which they are registered. In addition they must

i. obtain credit for MATH 151 (or 154 or 157), 152 (or 155 or 158), 232, 251, and STAT 270, and

ii. obtain credit for at least 5 of the following courses: STAT 330, 350, 380, 402, 410, 420, 430, 440, 450, 460 and ACMA 330. (This will normally include STAT 330, 350, and 450.)

Extended Minor Program
An extended minor 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.

Department of Philosophy
Location: 4604 Diamond Building
Telephone: 778.782.3343
Chair: J.H. Tietz BA (Pacific Lutheran), PhD (Claremont)

Professor Emeritus
L. Resnick BA, PhD (Columbia)

Professors
R.D. Bradley BA, MA (NZ), PhD (ANU)
S. Davis BA (Roch), MA, PhD (Ill)
R.E. Jennings BA, MA (Qu), PhD (Lond)
N.M. Swartz BA (Harv), MA, PhD (Indiana)

Associate Professors
P.P. Hanson BA (Calg), MA, PhD (Prin)
J.H. Tietz BA (Pacific Lutheran), PhD (Claremont), Chair of Department
D.D. Todd BA (San Francisco State), PhD (Br Col)
D. Zimmerman BA, MA, PhD (Mich)

Assistant Professors
K. Akins BA (Manit), PhD (Mich)
S. Black BA (Concordia), PhD (Camb)
M. Hahn BA (S Fraser), MA (Br Col), PhD (Calif)
B.T. Ramberg BA (Oslo), MA, PhD (Qu)

Senior Lecturer
P.T. Horban BA (Sask), MA, PhD (W Ont)

Advisor
Mr. D. Bevington, 4625 Diamond Building, 778.782.4852

General Information
All 100 division courses (and PHIL 001) serve to improve students' skills in critical thinking, logical analysis and clarity of expression.

One hundred division courses and PHIL 001 have no prerequisites and may be taken in any order by any student in any faculty. These courses will acquaint students with some of the most important problems, perspectives and methods in Philosophy. Moreover, all 100 division courses bear on particular problems and subjects which will be encountered in other areas of study.
Two hundred division courses are slightly more advanced than 100 division courses and are more specific in subject matter. It is recommended, but not mandatory, that students wishing to enroll in a 200 division Philosophy course have completed 15 semester hours of university work or its equivalent. (PHIL 203 and 214 have additional prerequisites.)

Three hundred and 400 division courses. Normally, students must have at least six credit hours of Philosophy in the lower division before taking courses in the upper division program. However, for students majoring in other departments, who have a keen interest in a particular upper division course, this requirement may be waived by the department. 400 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 take at least two 300 division courses before enrolling in a 400 division course.

Undergraduate courses
Course descriptions for all Philosophy undergraduate courses.

Major Program

Lower Division Requirements
Students are required to complete at least 16 semester hours of lower division credit including the following.

all of
PHIL 100-3 Knowledge and Reality
PHIL 120-3 Facts and Values
PHIL 203-3 Metaphysics
PHIL 210-4 Natural Deductive Logic

and one of
PHIL 150-3 History of Philosophy I
PHIL 151-3 History of Philosophy II

Upper Division Requirements
Students are required to complete at least 30 semester hours upper division credit including the following courses.

PHIL 301-3 Epistemology

at least one of
PHIL 320-3 Social and Political Philosophy
PHIL 321-3 Moral Issues and Theories
PHIL 421-4 Ethical Theories

at least one of
PHIL 341-3 Philosophy of Science
PHIL 343-3 Philosophy of Mind
PHIL 344-3 Philosophy of Language I

at least two of
PHIL 350-3 Ancient Philosophy
PHIL 353-3 Locke and Berkeley
PHIL 354-3 Descartes and Rationalism
PHIL 355-3 Hume and Empiricism
PHIL 451-4 Kant
PHIL 452-4 Nineteenth Century European Philosophy
PHIL 453-4 Background to Analytical Philosophy

Honors Program
An honors program is offered for students interested in advanced work in Philosophy, and is strongly advised for students who plan to pursue a post-graduate degree in Philosophy.
**Course Requirements**
Entering students must first complete 60 semester hours including 12 semester hours of Philosophy, must fulfill lower division requirements for the Philosophy major program listed above, and must complete PHIL 301. A GPA of 3.0 or higher for all Philosophy courses normally is expected for entrance to, and continuation in, the program, but does not by itself guarantee either. Students proposing honors must submit an application (available in the Department Office), and consult the undergraduate advisor. After one semester in the honors program, a candidate must, in consultation with the undergraduate advisor, devise a program of studies. Consideration of the application and proposed program of studies will be based on the department's assessment of the student's potential for advanced work.

Students pursuing honors must

- fulfill the requirements of the Philosophy major program
- complete a total of at least 50 semester hours of upper division courses in Philosophy
- complete two honors tutorials in the last semester, or last two semesters, 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**

**Course Requirements**
Students are required to complete at least eight Philosophy courses including at least five courses in the upper division. These courses may be either an individually designed program or those given in the core program below.

*one of*

PHIL 100-3 Knowledge and Reality
PHIL 110-3 Introduction to Logic and Reasoning

*all of*

PHIL 120-3 Facts and Values
PHIL 203-3 Metaphysics
PHIL 301-3 Epistemology

plus at least four additional upper division courses

With the help of 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. A student must have their program approved by the advisor for the extended minor program.

**Joint Major in Philosophy and Humanities**
Program information may be found in the Humanities section.

**Seminars and Special Topics Courses**
A student may not enroll in a Philosophy seminar or selected topics course which deals with a general topic for which the student has received credit in another Philosophy seminar or special topics course.

**Reading Lists and Course Outlines**
Reading lists and course outlines are available at the Philosophy Department. The content of some courses varies considerably from time to time.
Program in Cognitive Science
Program information may be found within the Faculty of Arts section.

Upper Division Courses Listed by Field (partial listing)

Epistemology and Metaphysics
The following two courses are continuations of PHIL 100 and 203 at a more advanced level.

PHIL 301-3 Epistemology
PHIL 455-4 Contemporary Issues in Epistemology and Metaphysics

Logic
The following two courses offer concentrated work in logic and are continuations of PHIL 210 and 214.

PHIL 310-3 Modal Logic and Its Applications
PHIL 314-3 Topics in Logic I

Ethics and Aesthetics
The following are continuations of PHIL 120 and 220, and 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 421-4 Ethical Theories

The following course is a continuation of PHIL 242.

PHIL 325-3 Philosophy of Art II

History of Philosophy
The following are continuations of PHIL 150 and 151, and examine, at a more advanced level, the philosophical foundations of Western culture.

PHIL 350-3 Ancient Philosophy
PHIL 353-3 Locke and Berkeley
PHIL 354-3 Descartes and Rationalism
PHIL 355-3 Hume and Empiricism
PHIL 451-4 Kant
PHIL 452-4 Nineteenth Century European Philosophy
PHIL 453-4 Background to Analytical Philosophy
PHIL 456-4 Twentieth Century European Philosophy

Methodology, Science, Mind, Language
The following five courses introduce special areas of philosophical interest.

PHIL 340-3 Philosophical Methods
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
Philosophy Undergraduate Courses

Faculty of Arts

PHIL 001-3 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. (Lecture/Tutorial) Open to all students.

PHIL 100-3 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. (Lecture/Tutorial) Open to all students.

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. (Lecture/Tutorial) Open to all students.

PHIL 120-3 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 or 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. (Lecture/Tutorial) Open to all students.

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, St. Augustine, St. Thomas Aquinas and Galileo. 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. (Lecture) Open to all students.

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. (Lecture) Open to all students.

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. (Lecture/Tutorial) Prerequisite: one of PHIL 100, 150,151.

PHIL 210-4 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. (Lecture/Tutorial)

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. (Lecture/Tutorial) Prerequisite: one of PHIL 210, MACM 101, MATH 144, CMPT 205.
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. (Lecture/Tutorial)

PHIL 231-3 Selected Topics
A specific topic, philosopher or philosophical work to be dealt with as occasion and demand warrant. (Lecture/Tutorial)

PHIL 232-3 Selected Topics
A specific topic, philosopher or philosophical work to be dealt with as occasion and demand warrant. (Lecture/Tutorial)

PHIL 240-3 Philosophy of Religion
A critical analysis of classic and contemporary arguments concerning the rationality of belief in God, and related issues. (Lecture/Tutorial)

PHIL 241-3 Philosophy in Literature
Philosophical themes in the writings of such authors as Voltaire, Turgenev, Dostoevski, Sartre, Camus, Conrad and Golding. (Lecture/Tutorial)

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. (Lecture/Tutorial)

PHIL 244-3 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. (Lecture/Tutorial)

PHIL 280-3 Introduction to Continental Philosophy
A study of nineteenth century figures such as Kant, Hegel, Kierkegaard, and Nietzsche, and subsequent developments in continental philosophy such as phenomenology, existentialism, hermeneutics, structuralism, deconstruction and textualism. (Lecture/Tutorial)

PHIL 300-3 Introduction to Philosophy
An introductory course specifically intended for students in other departments who have at least 60 semester hours credit. 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. (Lecture/Tutorial) Prerequisite: At least 60 semester hours credit. 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.

PHIL 301-3 Epistemology
An examination of central theories of knowledge such as realism, idealism, pragmatism, phenomenalism, rationalism, empiricism, and causal theories of knowledge. Other topics to be discussed may include, for example, the Gettier problem, scepticism, the nature of belief, reason, and sensation, the problem of induction, and foundationalism. (Seminar) Prerequisites: one of PHIL 100, 150, 151; PHIL 203.

PHIL 310-3 Modal Logic and its Applications
(Seminar) Recommended: PHIL 210, 214, or an otherwise suitable background.
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. (Seminar) Recommended: PHIL 210, 214, or an otherwise suitable background.

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. (Seminar) 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. (Seminar) Prerequisite: PHIL 120.

PHIL 325-3 Philosophy of Art II  
An advanced study of various topics in aesthetics. Possible topics include: formalism and expressionism in the arts, the nature of aesthetic judgment and criticism, meaning and truth in the arts, art and society, and creativity. (Seminar) Prerequisite: PHIL 242 or 6 hours of philosophy.

PHIL 331-3 Selected Topics  
A specific topic, philosopher or philosophical work to be dealt with as occasion and demand warrant. (Lecture/Tutorial) Prerequisite: as stated by department at time of offering.

PHIL 332-3 Selected Topics  
(Lecture) Prerequisite: as stated by department at time of offering.

PHIL 332-3 Selected Topics  
(Lecture) Prerequisite: as stated by department at time of offering.

PHIL 340-3 Philosophical Methods  
An examination of various techniques which philosophers use to define, discover and deal with conceptual problems. (Seminar) Prerequisites: PHIL 100 or 110; PHIL 203.

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. (Seminar) Prerequisites: PHIL 100 and 203, or COGS 200; PHIL 210 or 214.

PHIL 343-3 Philosophy of Mind  
A study of theories of the mind, consciousness, and human action. (Seminar) Prerequisites: PHIL 100 and 203, or COGS 200.

PHIL 344-3 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. (Seminar) Prerequisites: PHIL 100 and 203, or COGS 200.

PHIL 350-3 Ancient Philosophy  
(Seminar) Prerequisite: PHIL 100 or 150.

PHIL 353-3 Locke and Berkeley  
(Seminar) Prerequisite: PHIL 100 or 151.
PHIL 354-3 Descartes and Rationalism  
(Seminar) Prerequisite: PHIL 100 or 151.

PHIL 355-3 Hume and Empiricism  
(Seminar) Prerequisite: PHIL 100 or 151.

PHIL 360-4 Seminar I  
(Seminar) Prerequisite: as stated by department at time of offering.

PHIL 421-4 Ethical Theories  
A highly focussed, advanced examination of a selection of topics in normative or meta-ethics. (Seminar) Prerequisite: one of PHIL 120, 320, or 321.

PHIL 435-4 Selected Topics  
A specific topic, philosopher or philosophical work to be dealt with as occasion and demand warrant. (Lecture/Tutorial) Prerequisites: two 300 level Philosophy courses.

PHIL 444-4 Philosophy of Language II  
Advanced topics in recent work in philosophy of language, such as meaning, reference, speech acts, and language and thought. (Seminar) Prerequisite: PHIL 210 or 214.

PHIL 451-4 Kant  
(Seminar) Prerequisite: at least one of PHIL 353, 354, 355.

PHIL 452-4 Nineteenth Century European Philosophy  
An examination of one or more major philosophers from the European tradition, such as Hegel, Nietzsche, Schopenhauer, Comte, Fichte, Schelling, and Kierkegaard. (Seminar) Prerequisite: at least two of PHIL 353, 354, 355, 451.

PHIL 453-4 Background to Analytical Philosophy  
The development of philosophical thought in the late 19th and early 20th Centuries. Selections from the writings of F.H. Bradley, G. Frege, B. Russell, and the early Wittgenstein. (Seminar) Prerequisite: two 300 level Philosophy courses.

PHIL 455-4 Contemporary Issues in Epistemology and Metaphysics  
(Seminar) Prerequisite: two 300 level Philosophy courses.

PHIL 456-4 Twentieth Century European Philosophy  
A study of a representative figure or figures from major movements of contemporary continental philosophy. (Seminar) Prerequisite: at least two of PHIL 353, 354, 355, 451, 452.

PHIL 467-4 Seminar II  
(Seminar) Prerequisite: two 300 level Philosophy courses.

**Honors Tutorials**  
The following courses are open only to honors students.

PHIL 477-5 Honors Tutorial I (Seminar)  
PHIL 477 is a requisite for all honors students, and must be taken in one of the last two semesters of the student's Philosophy program. It must be taken concurrently with or prior to PHIL 478. At least 8 weeks prior to the semester in which they wish to enroll in PHIL 477, honors students should obtain departmental approval of a proposed syllabus and arrange for faculty supervision of the course.

PHIL 478-5 Honors Tutorial II (Seminar)  
PHIL 478 is a requisite for all honors students, and must be taken in one of the last two semesters of the student's Philosophy program. It must be taken concurrently with or consecutively to PHIL 477. At least 8 weeks prior to the semester in which they
wish to enroll in PHIL 478, honors students should obtain departmental approval of a proposed syllabus and arrange for faculty supervision of the course.

**Department of Political Science**

Location: 6067 Academic Quadrangle  
Telephone: 778.782.4293  
Chair: S. McBride BSc (Lond), MA, PhD (McM)

**Professors Emeriti**

E. McWhinney QC, LLM, SJD (Yale)  
F.Q. Quo BA (Natnl Taiwan), MA (Oregon), PhD (S Illinois)  
A.H. Somjee MA (Agra), PhD (Lond)

**Professors**

A. Ciria Abogado (Buenos Aires)  
L.J. Cohen AB, MA (Ill), PhD (Col)  
M.G. Cohen BA (Iowa Wesleyan), MA (NY), PhD (York)*  
T.H. Cohn BA (Mich), MA (Wayne), PhD (Mich)  
M.A. Covell BA (Br Col), MA, PhD (Yale)  
M. Robin BA (Manit), MA, PhD (Tor)  
D.A. Ross BA, MA, PhD (Tor)  
P.V. Warwick BA (McM), MA, PhD (Chic)

**Associate Professors**

L. Dobuzinskis LSc Econ Dipl'Det Sup (Paris), PhD (York)  
L.J. Erickson BA, PhD (Alta)  
M. Howlett BSocSci (Ott), MA (Br Col), PhD (Qu)  
S. McBride BSc (Lond), MA, PhD (McM), Chair of Department  
P. Meyer BA (Wellesley), MA, PhD (Columbia)  
P.J. Smith BA, MA (McM), PhD (Lond)

**Assistant Professors**

A. Heard BA (Dal), MSc (Lond), PhD (Tor)  
T. Kawasaki LLB (Doshisha), MA (Tor), MA, PhD (Prin)**  
D. Laycock BA (Alta), MA, PhD (Tor)  
A. Moens BA (Leth), MA (McM), PhD (Br Col)

*joint appointment with Women's Studies  
**joint appointment with Interdisciplinary Studies

**Advisor**

Ms. M. McIlroy  
6072 Academic Quadrangle  
778.782.3588

The Department of Political Science, through its academic program, develops a critical outlook on questions relating to the theory and practice of political institutions, policy alternatives on major issues facing society, and political ideals which influence public participation and the quality of political life in general. Students become familiar with competing theoretical approaches and learn to engage in rigorous political analysis. The program provides a variety of courses on the political problems of Canadian society and emphasizes a comparative perspective on the political systems of the different parts of the world. The network of political, judicial, economic and cultural relationships which constitute the international community is also studied.

The program serves those with a general interest in public affairs, as well as those who seek a career in teaching, research, law, journalism or public administration.
The Departmental Assistant will assist students or direct them to a faculty advisor. Students must consult with the departmental assistant or a faculty advisor before undertaking any program in Political Science.

**Undergraduate courses**
Course descriptions for all Political Science undergraduate courses.

**Fields of Study**
The basic introductory course is POL 100. All other courses, with the exception of POL 498 and 499, are divided into five Fields of Study as follows.

Field A Political Theory
- POL 201-3 Research Methods in Political Science
- POL 210-3 Introduction to Political Philosophy
- POL 311-3 History of Political Thought I
- POL 312-3 History of Political Thought II
- POL 313-3 Political Ideologies
- POL 314-3 Theory and Explanation in Political Science
- **POL 315-4 Quantitative Methods in Political Science (or SA 355)**
- POL 411-3 Normative Political Theory
- POL 412-3 Marxist Political Theory
- POL 413-3 Nature and Politics
- POL 414-3 Theories of Political Development
- POL 415-3 The Liberal Tradition
- POL 416-3 Feminist Social and Political Thought
- POL 417-3 Human Rights Theories
- *POL 418-3 Selected Topics in Political Theory I
- *POL 419-3 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 321-3 The Canadian Federal System
- POL 322-3 Canadian Political Parties
- POL 323-3 Provincial Government and Politics
- POL 324-3 The Canadian Constitution
- POL 347-3 Introduction to Canadian Foreign Policy
- POL 422-3 Canadian International Security Relations
- POL 423-3 BC Government and Politics
- POL 424-3 Quebec Government and Politics
- POL 425-3 Political Leadership in Canada
- POL 426-3 Canadian Political Behaviour
- POL 427-3 The Legislative Process in Canada
- *POL 428-3 Selected Topics in Canadian Government and Politics I
- *POL 429-3 Selected Topics in Canadian Government and Politics II

*These courses may require special prerequisites.

Field C Comparative Government and Politics
- POL 231-3 Introduction to Comparative Government and Politics
- POL 330-3 Government and Politics: Selected West European Nations
POL 332-3 Government and Politics: United States
POL 333-3 Soviet and Post-Soviet Political Systems
POL 334-3 East European Political Systems
POL 335-3 Government and Politics: People's Republic of China I
POL 336-3 Government and Politics: People's Republic of China II
POL 337-3 Government and Politics: Selected Latin American Nations I
POL 338-3 Government and Politics: Selected Latin American Nations II
POL 381-3 Government and Politics: Japan I
POL 382-3 Government and Politics: Japan II
POL 430-3 Government and Politics: Selected Asian Nations
POL 431-3 Comparative Western European Systems
POL 432-3 Comparative Communist and Post-Communist Political Systems
POL 433-3 Comparative Developing Systems
POL 435-3 Comparative Federal Systems
* POL 438-3 Selected Topics in Comparative Government and Politics I
*POL 439-3 Selected Topics in Comparative Government and Politics II
POL 441-3 Comparative Foreign Relations: Selected Political Systems
POL 481-3 Ethnic Politics and National Identity: Comparative Perspectives

*These courses may require special prerequisites.

Field D International Relations
POL 241-3 Introduction to International Politics
POL 341-3 International Integration and Regional Association
POL 342-3 Relations between Developed and Developing Nations
POL 343-3 Global Political Economy
POL 344-3 Public International Law
POL 345-3 The Nation-State and the Multinational Corporation
POL 346-3 International Organizations
POL 347-3 Introduction to Canadian Foreign Policy
POL 348-3 International Conflict Resolution
POL 422-3 Canadian International Security Relations
POL 441-3 Comparative Foreign Relations: Selected Political Systems
POL 443-3 Nuclear Strategy, Arms Control and International Security
POL 444-3 Politics and Foreign Policy in the European Economic Community
POL 445-3 American Foreign Policy: Processes, Issues
POL 446-3 International Relations in East Asia
POL 447-3 Theories of International Political Economy
* POL 448-3 Selected Topics in International Relations I
* POL 449-3 Selected Topics in International Relations II

*These courses 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 Introduction to Local Government and Politics
POL 351-3 The Public Policy Process
POL 352-3 Canadian Local and Urban Government and Politics
POL 353-3 Public Administration (Public Sector Management)
POL 354-3 Comparative Metropolitan Governance
POL 355-3 Governing Instruments
POL 357-3 Public Law
POL 451-3 Public Policy Analysis
POL 454-3 Urban Public Policy Making
POL 455-3 Issues in Policy Evaluation
POL 457-3 Issues in Policy Innovation
* POL 458-3 Selected Topics in Local and Urban Government and Politics
* POL 459-3 Selected Topics in Public Policy, Public Administration and Public Law

*These courses may require special prerequisites.

Students who fulfill the requirements may also take POL 498, Directed Readings in Political Science, and POL 499, Honors Essay.

To be approved as an honors student, a major or extended minor in Political Science, all students must first successfully complete POL 100 and either POL 201 or STAT 103 before any such status can be confirmed. Students in joint major programs are encouraged but not required to meet this quantitative methods requirement. Students may claim a Field A credit if they complete both POL 201 and STAT 103. It is recommended that POL 201 be completed prior to undertaking STAT 103. Students should note that only POL 210, or its equivalent, serves as a prerequisite for upper division courses in the Political Philosophy stream within Field A.

Major Program
Students' programs must meet the Faculty of Arts breadth requirements (see Breadth Requirements in the Faculty of Arts section of this Calendar).

Lower Division Requirements
POL 100-3 Introduction to Politics and Government

one of
* POL 201-3 Research Methods in Political Science (formerly 213)
* STAT 103-3 Introduction to Statistics for the Social Sciences

plus 15 hours in four of the five Fields of Study.

*A Field A credit may be claimed if both courses are completed, in which case it is recommended that POL 201 be completed first.

Upper Division Requirements
The following requirements balance concentration in one of the fields of Political Science with experience of the broad scope of the discipline.

Students may not proceed to upper division courses until they have completed the appropriate lower division prerequisites. In the case of selected topics courses, topics and prerequisites will be announced by the department at least one semester in advance. The specified prerequisites or departmental permission is required for entry into the course. For information as to which courses are in which fields, see Fields of Study above.

Students are required to complete 30 semester hours of upper division Political Science courses, including courses from at least three of the five fields to finish their program.

Honors Program
Applicants should write to the Chair of the Political Science Undergraduate Committee. Before registering, admission must be approved by a faculty advisor and the Undergraduate Studies Committee.

Students must have a CGPA of 3.0 and a GPA of 3.33 in all Political Science courses to be admitted to this program.
Students must complete the lower division requirements for a major as listed above plus an additional 50 semester hours of upper division Political Science courses, 15 semester hours of which must be from a single field, and 5 semester hours of which must be POL 499. This honors essay must be written in the field of concentration (Field of Study), but before a student is permitted to register in POL 499, the Departmental Assistant must receive a copy of the essay proposal approved by an instructor in the Field of Study who has agreed to supervise and evaluate the essay. A copy of the essay proposal and a letter of evaluation from the supervisor must be presented to the department before a student will be recommended to the Faculty of Arts for an honors degree in Political Science.

The department may not always provide an honors program in each of the Fields of Study; students should consult the Departmental Curriculum Committee before declaring an honors program in Political Science.

**Minor Program**

Students who plan to minor in Political Science must complete POL 100 and at least 12 additional semester hours in lower division courses, ensuring that they take courses in at least two of the five fields of Political Science.

Fifteen upper division semester hours in Political Science are also required.

**Extended Minor Program**

An extended minor program consists of the lower division requirements for a major in Political Science and the upper division requirements for a minor. A student must have their program approved by the advisor for the extended minor program.

**Joint Major in French, History and Politics**

This joint major offers a framework for study of the language, histories, politics and culture of the French speaking people of Canada and the world. It prepares students for careers in civil service, politics (either with an emphasis on Canadian government and politics or with an emphasis on international relations), the diplomatic service, international organizations, journalism, teaching and archival work. For further details see the Political Science French/History/Politics Co-ordinator or the Department of French section.

**Joint Major in Political Science and Latin American Studies**

**Political Science Requirements**

Students must satisfy the lower division requirements of both disciplines. In Political Science, this means that students must complete successfully POL 100 plus 15 semester hours of course work spanning at least four of the five fields of Political Science.

In addition to the special requirements in Latin American Studies, students must complete 30 upper division semester hours in three of the five Fields of Study of Political Science, as required for Political Science majors. POL 337 and POL 338 may not be used to satisfy Latin American Studies requirements.

For further information, see the Political Science/Latin American Studies co-ordinator or the Department of Spanish and Latin American Studies section.

**Joint Major in Political Science and Canadian Studies**

Students must satisfy the lower division requirements of both disciplines. In Political Science, this means that students must complete successfully POL 100 plus 15 semester hours of course work spanning at least four of the five fields in Political Science.

In addition to the special requirements for a Canadian Studies major, a student must complete 30 upper division hours in three of the five Political Science Fields of Study, as required for Political Science majors. Up to 12 hours that are available for credit in both Political Science and Canadian Studies may count toward the upper division requirements of both departments.

For further information, see the Political Science/Canadian Studies co-ordinator or the Centre for Canadian Studies section.
Joint Major in Political Science and Business Administration
Students wishing to pursue this program must discuss these plans with the appropriate advisors.

Lower Division Requirements
Students must take a minimum of 15 semester hours of course work in at least three fields of Political Science, including POL 100, 151 and 251, and must qualify for admission to the Faculty of Business Administration. Students must also satisfy the Faculty of Arts requirements if they elect to take their degree in the Faculty of Arts, or the Faculty of Business Administration requirements if they elect to take their degree in that Faculty.

Upper Division Requirements
Students must complete 24 hours of Political Science from at least three Political Science Fields of Study, including a minimum of nine semester hours (3 courses) in Field E, Public Policy/Administration and Local Government

Refer to the Business Administration section for upper division requirements. For further information, see the department's Business/Political Science Co-ordinator.

Political Science Undergraduate Courses

Faculty of Arts

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. (Lecture/Tutorial)

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. (Lecture/Tutorial)

Note: Students may not register in a 200, 300 or 400 division course in any field unless they have completed the appropriate prerequisite(s). In the case of selected topics courses, topics and additional prerequisites for each offering will be announced by the department at least one semester in advance. The specified prerequisites or departmental permission is required for entry into the course. For information as to which courses are in which fields, see the Department of Political Science section.

POL 201-3 Research Methods in Political Science
An introduction to quantitative research techniques in political science. (Lecture/Tutorial) Prerequisite: POL 100 or 151. Students with credit for POL 213 or SA 255 may not take POL 201 for further credit.

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 the background of the periods in which they were expressed. (Lecture/Tutorial) Prerequisite: POL 100. Students with credit for POL 111 may not take this course for further credit.

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. (Lecture/Tutorial) Prerequisite: POL 100 or 151.

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. (Lecture/Tutorial) Prerequisite: POL 100 or 151.
POL 231-3 Introduction to Comparative Government and Politics
An introduction to political processes and structures in comparative perspective. (Lecture/Tutorial) Prerequisite: POL 100. Students with credit for POL 131 may not take this course 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. (Lecture/Tutorial) Prerequisite: POL 100.

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. (Lecture/Tutorial) Prerequisite: POL 100 or 151.

POL 252-3 Introduction to Local and Urban Government and Politics
The political process in the urban municipality from a comparative perspective. (Lecture/Tutorial) Prerequisite: POL 100 or 151. Students with credit for POL 152 may not take this course for further credit.

POL 311-3 History of Political Thought I
Political thought from Plato to Rousseau. (Seminar) Prerequisite: POL 210 or 211 or PHIL 220.

POL 312-3 History of Political Thought II
Political thought from the French revolution to the Chinese revolution. (Seminar) Prerequisite: POL 210 or 211 or PHIL 220.

POL 313-3 Political Ideologies
A discussion of the major political ideologies which provide support for and legitimation for regimes and movements in the contemporary world. Liberalism, Socialism, Communism, Fascism, Anarchism, Participatory Democracy, Third World ideologies, etc., are emphasized. (Seminar) Prerequisite: POL 210 or 211 or PHIL 220. Students who have credit for POL 212 may not take this course for further credit.

POL 314-3 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. (Seminar) Prerequisite: POL 201 (or 213).

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. Prerequisites: STAT 103, or POL 201 or SA 255. Students who have completed POL 315 may not take SA 355 for further credit.

POL 321-3 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. (Seminar) Prerequisite: POL 221 and 222.

POL 322-3 Canadian Political Parties
Development of the Canadian party system. Party ideologies, organization, campaigns and elections. (Seminar) Prerequisite: POL 221 and 222.

POL 323-3 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. (Seminar) Prerequisite: POL 221 and 222.

POL 324-3 The Canadian Constitution
An analysis of the Canadian constitution from a theoretical and comparative perspective. Amendment, entrenchment, civil rights. (Seminar) Prerequisite: POL 221 and 222.
POL 330-3 Government and Politics: Selected West European Nations
An introduction to the politics in West European nations, with special emphasis on Britain and France. The analysis of patterns of political development, political culture, political institutions and processes will be highlighted. (Seminar) Prerequisite: POL 231. Students with credit for POL 331 may not take this course for further credit.

POL 332-3 Government and Politics: United States
An examination of the American political system, including the presidency, the congress, the courts, the bureaucracy and the party system. (Seminar) Prerequisite: POL 231.

POL 333-3 Soviet and Post-Soviet Political Systems
A comprehensive introduction to the evolution of the Soviet political system and the post-Soviet successor states. Topics examined will include the factors responsible for the disintegration of the USSR, the structure and dynamics of the Russian political system and the problems of post-communism through the Eurasian region. (Seminar) Prerequisite: POL 231.

POL 334-3 East European Political Systems
A comprehensive introduction to the political organization and political dynamics of the East European states including an examination of the various contemporary issues and problems which have influenced the political development of those countries. (Seminar) Prerequisite: POL 231.

POL 335-3 Government and Politics: People's Republic of China I
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. (Seminar) Prerequisite: POL 231.

POL 336-3 Government and Politics: People's Republic of China II
An analysis of China's current constitutional structure, modernization program, post-cultural revolution period, and development in both domestic and international affairs. Emphasis will be placed on explanations of political change and perspectives for future development. (Seminar) Prerequisite: POL 335.

POL 337-3 Government and Politics: Selected Latin American Nations I
An examination of the political systems of selected Latin American nations, including an analysis of political culture, political economy, political institutions, interest groups and both formal and informal political processes. (Seminar) Prerequisite: POL 231.

POL 338-3 Government and Politics: Selected Latin American Nations II
An examination of the political systems of selected Latin American nations, including an analysis of political culture, political economy, political institutions, interest groups and both formal and informal political processes. (Seminar) Prerequisite: POL 231.

POL 341-3 International Integration and Regional Association
Theories of integration, and the empirical analysis of selected regional associations, historical and contemporary. Imperialism, federation, association. (Seminar) Prerequisite: POL 241.

POL 342-3 Relations Between Developed and Developing Nations
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. (Seminar) Prerequisite: POL 241.

POL 343-3 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. (Seminar) Prerequisite: POL 241.
POL 344-3 Public International Law
Sovereignty, nationality, jurisdiction, arbitration. Examination of selected cases exemplifying present trends in the international legal order. (Seminar) Prerequisite: POL 241.

POL 345-3 The Nation-State and the Multinational Corporation
A study of relations between multinational enterprise and national interests in developed and developing countries. (Seminar) Prerequisite: POL 241.

POL 346-3 International Organizations
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. (Seminar) Prerequisite: POL 241. Students who have credit for POL 141 may not take this course for further credit.

POL 347-3 Introduction to 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. (Seminar) Prerequisites: POL 221 or 222, and 241. This course may serve as a field B or D course for departmental requirements. Students with credit for POL 421 may not take this course for further credit.

POL 348-3 International Conflict Resolution
The course concentrates on negotiation, preventive diplomacy, crisis management and conflict termination. Methods of peaceful and coercive diplomatic resolution of international conflicts will be explored, with emphasis on investigation of the various contributions that have been made by United Nations peacekeeping, peacemaking and peace enforcement operations. Course simulation work, when used, will focus on problems of containing the proliferation of weapons of mass destruction. (Seminar) Prerequisite: POL 241.

POL 351-3 The Public Policy Process
Combines a practical analysis of the structures and processes surrounding contemporary policy issues and a theoretical analysis of alternative approaches to the study of public issues and a theoretical analysis of alternative approaches to the study of public policy-making. (Lecture) Prerequisites: POL 251.

POL 352-3 Canadian Local and Urban Government and Politics
A comparative study of local government in Vancouver, Winnipeg and Toronto. The nonpartisan tradition and interest groups. Relations with other levels of government. (Seminar) Prerequisite: POL 252. Students with credit for POL 351 may not take this course for further credit.

POL 353-3 Public Administration (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. (Seminar) Prerequisite: POL 251. Students with credit for POL 356 may not take this course for further credit.

POL 354-3 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. (Seminar) Prerequisite: POL 252.

POL 355-3 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. (Seminar) Prerequisites: POL 251. Students with credit for POL 452 may not take this course for further credit.

POL 357-3 Public Law
An examination of cases and issues designed to acquaint students with main themes and conventions of Public Law. (Seminar) Prerequisite: POL 151.

POL 381-3 Politics and Government of Japan I
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. (Seminar) Prerequisite: POL 231.

POL 382-3 Politics and Government of Japan II
This course deals with 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 post-war development of Japan as a democratic polity. (Seminar) Prerequisite: POL 381.

POL 411-3 Normative Political Theory
An examination of the major political norms which have oriented public conduct and provided the standards for evaluating the quality of public life; liberty, justice, equality, participation, privacy, public interest, accountability, obedience, dissent and resistance. (Seminar) Prerequisite: POL 312 or 313 (or 212).

POL 412-3 Marxist Political Theory
An examination of the thought and program of political action suggested by Marx, Lenin, Mao, Djilas, Lukacs, Kolakowski, Gramsci, Fanon, Althusser and Marcuse. (Seminar) Prerequisite: POL 312.

POL 413-3 Nature and Politics
This course examines the different ways in which the relationship between nature and politics has been understood since the early beginnings of political thought and up to sociobiology and other contemporary theories. Topics to be covered include: the Aristotelian world view; natural law; Hobbes and modernity; evolutionism from Darwin to sociobiology; ethology and political behavior. (Seminar) Prerequisites: POL 210.

POL 414-3 Theories of Political Development
An examination of theories of the social and economic forces which challenge the adequacy of political institutions and political skills. The ideas of B. Moore, Jr., Huntington, Apter, Friedrich and Gurr. (Seminar) Prerequisite: POL 210.

POL 415-3 The Liberal Tradition
A critical examination of the development of liberalism from classical liberalism (e.g. John Locke) to contemporary conflict between revisionist and neoclassical or libertarian currents. (Seminar) Prerequisite: POL 312 or 313 (or 212).

POL 416-3 Feminist Social and Political Thought
This course will examine the works of major feminist thinkers and the problems of developing feminist theory. (Seminar) Prerequisite: POL 210.

POL 417-3 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. (Seminar) Prerequisites: POL 210 and 231. Recommended: PHIL 220 or 320.

POL 418-3 Selected Topics in Political Theory I (Seminar)
Prerequisite: POL 210.

POL 419-3 Selected Topics in Political Theory II (Seminar)
Prerequisite: POL 210.
POL 422-3 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. (Seminar) Prerequisites: POL 221 or 222, POL 241 and 347. This course may serve as a field B or D course for departmental requirements.

POL 423-3 BC Government and Politics
The legislature, political parties, pressure groups, relations with other governments, and other aspects of the policy process. (Seminar) Prerequisite: POL 221 and 222.

POL 424-3 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. (Seminar) Prerequisite: POL 221, 222 and 321.

POL 425-3 Political Leadership in Canada
The roles and functions performed by the Prime Minister and the provincial Premiers and the various constraints on the exercise of these functions. The social background, values, attitudes, and leadership styles of selected political leaders (Seminar) Prerequisite: POL 221 and 222.

POL 426-3 Canadian Political Behavior
The study of political attitudes and behavior in Canada. Topics will include political culture, public opinion, elections and voting behavior. (Seminar) Prerequisite: POL 201 (or 213) and 222. Students with credit for POL 326 may not take this course for further credit.

POL 427-3 The Legislative Process in Canada
An analysis of legislatures in the Canadian federal and provincial arenas, including their role in the policy process, their strengths and weaknesses, and prescriptions for reform. (Seminar) Prerequisite: POL 221 and 222. Students with credit for POL 325 may not take this course for further credit.

POL 428-3 Selected Topics in Canadian Government and Politics I
(Seminar) Prerequisite: POL 221 and 222.

POL 429-3 Selected Topics in Canadian Government and Politics II
(Seminar) Prerequisite: POL 221 and 222.

POL 430-3 Government and Politics: Selected Asian Nations
An examination of political change in the countries of Asia since the end of colonial rule. The problems of national integration, social and economic equality, and political participation. The role of elites, party organizations, the bureaucracy, the army, and political institutions in nation-building will also be considered. (Seminar) Prerequisite: POL 231.

POL 431-3 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. (Seminar) Prerequisite: POL 330.

POL 432-3 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. (Seminar) Prerequisite: POL 231.
POL 433-3 Comparative Developing Systems
A survey of political problems in selected Third World countries. Topics covered will include: the preconditions for democracy, the role of military governments, possibilities of revolution, and the meaning of economic dependency influences on the political systems of developing nations. (Seminar) Prerequisites: POL 231 and one of POL 335, 336, 337, 338, 339, 414, 430.

POL 435-3 Comparative Federal Systems
Comparative analysis of federations such as the Canadian, American, West German, Yugoslavian, Soviet, Indian and Swiss. (Seminar) Prerequisites: POL 231 and one of 321, 324.

POL 438-3 Selected Topics in Comparative Government and Politics I
(Seminar) Prerequisite: POL 231.

POL 439-3 Selected Topics in Comparative Government and Politics II
(Seminar) Prerequisite: POL 231.

POL 441-3 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. (Seminar) Prerequisite: POL 231 or 241. This course may serve as a field C or D course for departmental requirements.

POL 443-3 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. (Seminar) Prerequisites: one of POL 341, 342, 343, 344, 345 or 346.

POL 444-3 Politics and Foreign Policy in the European Economic Community
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. (Seminar) Prerequisite: POL 241.

POL 445-3 American Foreign Policy: Processes, Issues
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. (Seminar) Prerequisite: POL 241 and 332.

POL 446-3 International Relations of East Asia
An overview and analysis of international relations in East Asia. (Seminar) Prerequisite: POL 241.

POL 447-3 Theories of International 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. Prerequisites: POL 241 and 343.

POL 448-3 Selected Topics in International Relations I
(Seminar) Prerequisite: POL 241.

POL 449-3 Selected Topics in International Relations II
(Seminar) Prerequisite: POL 241.

POL 451-3 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. (Seminar) Prerequisite: POL 351 or 355.
POL 454-3 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. (Seminar) Prerequisite: POL 252

POL 455-3 Issues in Policy Evaluation
A practical analysis of the evaluation and the adjustment of public policies and programs designed and implemented to address
long-standing social and economic concerns. The course will look at governmental and non-governmental actors involved in the
processes of policy evaluation. (Seminar) Prerequisite: POL 251.

POL 457-3 Issues 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. (Seminar) Prerequisite: POL 351.

POL 458-3 Selected Topics in Local and Urban Government and Politics
(Seminar) Prerequisite: POL 252.

POL 459-3 Selected Topics in Public Policy, Public Administration and Public Law
(Seminar) Prerequisite: POL 151 or 251.

POL 481-3 Ethnic Politics and National Identity: Comparative Perspectives
Examines the impact of ethnicity on the dynamics and organization of political systems, including the impact of ethnic diversity
on modes of political representation, the formation of public policy, and the quest for political stability and national identity.
(Seminar) Prerequisite: POL 231.

POL 498-3 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
registering in this course must have their program of readings approved (by the supervising instructor and the Undergraduate
Studies Committee) prior to registration. 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.)

Department of Psychology
Location: 5246 Classroom Complex
Telephone: 778.782.3354, 778.782.3427 Fax
Chair: C.D. Webster BA (Br Col), MA (Qu), PhD (Dal)

Professors Emeriti
P. Bakan BA, MA, PhD (NY)
A.L. Diamond BA (Cinc), MA, PhD (Col)

Professors
B.K. Alexander BA (Miami, Ohio), MS, PhD (Wis)
C.B. Crawford BA, MSc (Alta), PhD (McG)
D.L. Krebs BA (Br Col), MA, PhD (Harv)
J.E. Marcia BA (Wittenberg), MA, PhD (Ohio State)
V. Modigliani Dott Fisica (Rome), MA, PhD (Wayne State)
A.C. Paranjpe BA, MA, PhD (Poona)
R.M. Roesch BS (Arizona), PhD (Ill), Director of Clinical Program
J.N. Strayer BA (Col), MA, PhD (S Fraser)
C.D. Webster BA (Br Col), MA (Qu), PhD (Dal), Chair of Department
Associate Professors
E.W. Ames BSc (Tufts), PhD (C'nell)
B.L. Beyerstein BA (S Fraser), PhD (Calif)
A.R. Blackman BSc (Lond), BSc (Edin), MSc, PhD (McG)
M.L. Bowman BA (Alta), MSc, PhD (McG)
E.M. Coles BSc, PhD (Lond)
D.N. Cox BA, MA, PhD (Br Col)
> C.M. Davis BA (Indiana), PhD (Wash)
R.I. Freeman BSc (Tor), MA, PhD (Wat)
S. Hart BA, PhD (Br Col)
M. Kimball BA (Macalester), PhD (Mich)*
J.E. Koepke BA (Ohio Wesleyan), MA, PhD (Iowa)
R.F. Koopman AB, PhD (Ill)
W.R. Krane BA (Windsor), MA, PhD (York)
R.G. Ley BA (S Fraser), MA, PhD (Wat)
C.G. McFarland BA (Alta), MA, PhD (Wat)
R. Mistlberger BA (McG), PhD (Chic)
M.M. Moretti BA (Brock), MA, PhD (S Fraser)
J.R.P. Ogloff BA (Calg), MA (Sask), JD, PhD (Neb)
W. Turnbull BA (Tor), MA, PhD (N Carolina)
B.W.A. Whittlesea BA, MA (Windsor), PhD (McM)

Assistant Professors
K. Bartholomew BA (S Fraser), PhD (Stan)
R.M. Buehler BA, MA, PhD (Wat)
P.K. Kerig BA, MA, PhD (Calif)
M.D. Maraun BA (S Fraser), MA (Guelph), PhD (Tor)
R.D. Wright BA (Br Col), MA, PhD (Western)

Adjunct Professors
R. Atkinson BA, MA, PhD (Manit)
J. Anderson BA (Harv), PhD (Br Col)
D. Eaves MB, ChB (Liv)
S. Holliday BSc (N Michigan), MA, PhD (Br Col)
B. Jessup BA (York), MA, PhD (Western)
M. Kendrick BA, MA, PhD (Br Col)
W. Koch BA (Montana), MA, PhD (Alta)
R. Kropp BA (Br Col), MA, PhD (S Fraser)
B. Ledwidge BSc (Loyola), MA, PhD (S Fraser)
T. LePage BA (Texas Chri), MA (Wis), PhD (Portland)
P.D. McLean BA (Windsor), MA, PhD (Lond)
G.H. Nemetz BA, MA, PhD (Br Col)
A. Posthuma BA, MA (Br Col), PhD (Wash)
C. Smiley BA (McM), MA (Villanova), PhD (Western)
J. Ternes BA (Wat), MA, PhD (Br Col)
G. Tien BSc, MA (SC), PhD (S Fraser)
S. Welch PhD (Man)

Associate Members
J. Anderson, Crawford Research Laboratory
R. Corrado, Criminology
B.M.F. Galdikas, Archaeology
A. Horvath, Education
R. Steinberg, Counselling
P.H. Winne, Education
R.C. Ydenburg, Biological Sciences

Laboratory Instructors
J. Beggs BA (Melbourne)
L.J. Foster BA, MA (New Br)
E. Michno BA (Wat)
Lecturer
G.D. Poole BA (Br Col), MA (San Diego), PhD (S Fraser)

*joint appointment with Women's Studies

Advisors
Ms. C. Medford, Undergraduate Advisor, 5252 Classroom Complex, 778.782.3359
Ms. B. Davino, Departmental Assistant, 5249 Classroom Complex, 778.782.4840

Undergraduate courses
Course descriptions for all Psychology undergraduate courses.

Letters of Permission
See also the General Information section of the Calendar.

The Department of Psychology does not normally provide letters of permission for students already registered at Simon Fraser University to take PSYC 201 or 210 at a different institution. Such permission may be granted for other 100 to 300 level courses. Direct all enquiries to the Psychology undergraduate advisor.

Major Program
To be admitted to the major program, students must obtain a minimum cumulative grade point average of 2.0 in the following courses.

- PSYC 100-3 Introduction to Psychology I
- PSYC 102-3 Introduction to Psychology II
- PSYC 201-3 Research Methods in Psychology
- PSYC 210-3 Data Analysis in Psychology

PSYC 100 should be taken in the first semester and PSYC 102 should follow PSYC 100 as early as possible. (Concurrent registration in PSYC 100 and 102 is permitted.) PSYC 201 and 210 should be taken during the first four levels.

To receive a major in Psychology, students must
- meet the graduation requirements of the University (see General Information section) and Faculty of Arts (see Faculty of Arts section - requirements for graduation)
- successfully complete one course from each of the following groups.
  - Group A PSYC 221 or 280
  - Group B PSYC 241, 250, 260, 270
- successfully complete 30 credit hours in upper division Psychology, including either PSYC 307 or 308. No more than eight credits in directed studies courses may be applied to the Psychology major. A minimum of 15 credit hours of upper division course work must be completed at Simon Fraser University.

Honors Program

Admission
Psychology majors wishing to apply to the honors program should obtain the appropriate form from the Psychology general office. The deadline for application submission is March 15th each year.

Admission requires a CGPA of 3.0 for the following courses.

- PSYC 100-3 Introduction to Psychology I
- PSYC 102-3 Introduction to Psychology II
- PSYC 201-3 Research Methods in Psychology
- PSYC 210-3 Data Analysis in Psychology
Other admission requirements are as follows.

- successful completion of one course from each of the following groups.
  - Group A - PSYC 221 or 280
  - Group B - PSYC 241, 250, 260, 270
- completion of 75 semester hours of course work with a minimum cumulative grade point average of 3.0
- a minimum GPA of 3.0 in Simon Fraser University Psychology courses
- successful completion of 15 semester hours of Psychology course work at Simon Fraser University
- approval and signature of a faculty member willing to advise the honors project. Students having difficulty finding an honors advisor should contact the departmental Undergraduate Advisor for assistance.

**Continuation**

To remain in the honors program, students must

- maintain a minimum 3.0 or higher grade point average for all courses taken in each semester
- maintain a minimum 3.0 or higher grade point average for all Psychology courses taken in each semester

Students not meeting the requirements may be dropped from the program, but may apply for readmission at a later date.

**Completion**

To receive honors in Psychology students must

- meet the honors graduation requirements of the University and the Faculty of Arts
- successfully complete 60 upper division credit hours, of which 50 credit hours must be in upper division Psychology, including the following courses:
  - PSYC 301 (taken as soon as possible after PSYC 210 and prior to entry to the Honors Programs)
  - PSYC 307 or 308
  - PSYC 402
  - PSYC 490 and 499 (together comprise the Honors Project and are taken only after completion of 90 credit hours, with at least 20 in upper division Psychology)

**Notes:** no more than eight of these upper division credits may be in Directed Studies courses. Up to 12 of these upper division credits may be approved options from other departments.

- obtain certification by the Undergraduate Studies Committee that the program has been satisfactorily completed.

**Minor Program**

To be admitted to the minor program, students must obtain a minimum cumulative grade point average of 2.0 in the following courses.

PSYC 100-3 Introduction to Psychology I
PSYC 102-3 Introduction to Psychology II
PSYC 201-3 Research Methods in Psychology

For a Psychology minor, students must complete one of PSYC 221, 241, 250, 260, 270 or 280 and a minimum of 15 credit hours of upper division (300 or 400 level) Psychology courses with a cumulative grade point average of 2.0. No more than 3 credit hours may be in directed studies courses. At least eight upper division credit hours must be taken at Simon Fraser University.

**Extended Minor Program**

An extended minor 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.
Joint Major in Psychology and Criminology
This program is for those interested in exploring various relationships between the study of criminology and psychology. Students are encouraged to consult advisors in both the Department of Psychology and the School of Criminology.

To be admitted, students must satisfy the admission requirements for majors in both Criminology and Psychology (refer to those sections of the Calendar). To continue in the joint major, students must maintain a CGPA of 2.25, and will not be permitted to register 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.

Criminology Requirements

Group A Lower Division Requirements
all of
CRIM 101-3 Introduction to Criminology
CRIM 103-3 Psychological Explanations of Criminal and Deviant Behaviour
CRIM 104-3 Sociological Explanations of Criminal and Deviant Behaviour
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 120-3 Research Methods in Criminology
PSYC 201-3 Research Methods in Psychology

plus one of
CRIM 151-3 Introduction to Policing
CRIM 203-2 Historical Reaction to Crime and Deviance
CRIM 210-3 Law, Youth, and Young Offenders
CRIM 213-3 The Female Offender
CRIM 231-3 Introduction to the Judicial Process
CRIM 241-3 Introduction to Corrections

Group B Lower Division Requirements
all of
SA 150-4 Introduction to Sociology
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 Philosophical Concepts and Reasoning
PHIL 120-3 Introduction to Moral Philosophy

Upper Division Requirements
all of
CRIM 320-3 Advanced Research Issues in Criminology
CRIM 330-3 Criminal Procedure and Evidence

plus a minimum of 18 credit hours of upper division Criminology group A courses and six credit hours of upper division group B courses (excluding CRIM 369 and 462, and any Psychology courses).
Psychology Requirements

Lower Division Requirements

all of
PSYC 100-3 Introduction to Psychology I
PSYC 102-3 Introduction to Psychology II
PSYC 210-3 Data Analysis in Psychology

plus one of
CRIM 201-3 Research Methods in Psychology
CRIM 120-3 Research Methods in Criminology

plus one of
PSYC 221-3 Introduction to Cognitive Psychology
PSYC 280-3 Biological Bases of Behaviour

plus one of
PSYC 241-3 Introduction to Abnormal Psychology
PSYC 250-3 Child Psychology
PSYC 260-3 Social Psychology
PSYC 270-3 Introduction to Personality

Upper Division Requirements
Students must complete a minimum of 21 credit hours of upper division Psychology courses including either PSYC 307 or 308.

Joint Major in Psychology and Business Administration
For information, see the Faculty of Business Administration section.

Joint Major in Psychology and Women's Studies
For information, see Department of Women's Studies.

Co-operative Education Program
The department offers a co-operative education program for qualified students who wish practical experience in psychology. The program entails planned study semesters and employment in the area of the student's choice.

Note: This program will not provide training in clinical psychology or therapeutic techniques which can be obtained only through approved clinical psychology graduate programs.

To be eligible for admission, students must have completed 30 semester hours with a minimum CGPA of 3.0. Prior to admission, students must complete PSYC 100, 102, 201 and 210 or their equivalents. Transfer students must complete at least 15 semester hours at Simon Fraser University.

For further details, students should refer to the Co-operative Education section. Arrangements for work semesters are made through the Faculty of Arts Co-op Co-ordinator who should be consulted at least one semester in advance.

Advice to Students from Other Departments
Students who are not taking a major, minor or honors program in Psychology may take Psychology courses if they meet the prerequisites or special instructions. The listed prerequisites indicate the minimal background expected by instructors who teach the courses.

Preparation for Graduate Study
Graduate schools generally have more applicants than they can accept. Most graduate schools in Psychology screen applicants on the following bases.
• grade point average (since students normally apply for admission to graduate school early in their fourth academic year, graduate schools normally evaluate the cumulative grade point average) - Graduate Record Exam scores
• credit in laboratory courses in Psychology (such as PSYC 301, 303, 311, and 325)
• courses in sciences other than Psychology, especially Biology
• research experience (e.g. completion of an honors project, employment in research-related areas, completion of independent research projects). It is advantageous for applicants to have presented a scholarly paper at a scientific meeting, or to have contributed to the publication of a scholarly paper
• three letters of recommendation from faculty members

A detailed description of admission requirements in Canadian and US universities may be found in Graduate Study in Psychology published by the American Psychological Association.

For details of admission requirements at Simon Fraser University consult the Graduate Studies section.

**Psychology and Statistics**

In most areas of Psychology, a level of statistical sophistication is required before one can undertake independent research or evaluate the research of others. The department offers several courses in research methodology and data analysis, namely PSYC 201, 210, 301, 311, 410, and 411. Students who have a special interest in more extensive statistical training to facilitate their work in Psychology, should also consider STAT 101, 102, 302, 410, and 430.

**Suggested Sequence For First Four Levels**

**Typical Program for Majors and Honors in Psychology**

<table>
<thead>
<tr>
<th>Level Courses</th>
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<tbody>
<tr>
<td>1 PSYC 100-3</td>
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<tr>
<td>2 PSYC 102-3</td>
</tr>
<tr>
<td>3 PSYC 201-3 and courses at the 200 division</td>
</tr>
<tr>
<td>4 PSYC 210-3 and courses at the 300 division</td>
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</tbody>
</table>

**Directed Studies Courses (PSYC 493-498 inclusive)**

These courses enable an individual student or a small group of students to work with a faculty member on a reading or research project of mutual interest. The most common reasons for a student taking such a course are as follows.

- the continuation of a reading or research project begun in a 400 level seminar
- covering material not covered in the regular course offerings
- the completion of a research or reading project which does not fall within the terms of reference of other courses

Directed studies courses may not duplicate material covered in other Psychology courses.

The minimum entry requirements are a B (3.0) average and at least 60 accumulated semester hours. In addition, department permission is required. Students taking a directed studies course must complete an application form, (available in the department) in conjunction with the intended instructor.

Students taking Psychology major or honors may count no more than eight semester hours of directed studies toward the required number of upper division Psychology credits.

**Psychology Undergraduate Courses**

**Faculty of Arts**

PSYC 100-3 Introductory 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. (Lecture/Tutorial) Prerequisite: students who have taken PSYC 101 may not register for PSYC 100.

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. Prerequisite: PSYC 100 (concurrent registration permitted). Students who have taken PSYC 101 may not register for PSYC 102.

PSYC 106-3 Social Issues
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. (Lecture/Tutorial)

PSYC 180-3 Brain and Behavior
A general introduction to the role of the central nervous system in understanding some of the most important phenomena of behavior and experience. Considers such questions as the physiological basis of memory storage; the neurophysiological basis of hunger, thirst, sex drives, sleep, dreaming and emotional reactions. (Lecture/Tutorial)

PSYC 201-3 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. (Lecture/Laboratory) Prerequisites: PSYC 100 and 102, or (PSYC 101).

Note: Approved Criminology majors or honors students may substitute CRIM 120 as a prerequisite in place of PSYC 201, but must seek approval from the undergraduate advisor in Psychology prior to registration. They will be required to take an additional upper division Psychology course to replace PSYC 201.

PSYC 210-3 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 Level 4. (Lecture/Laboratory) Prerequisites: PSYC 201 and BC High School Math 12 or MATH 100 or MATH 110 or equivalent. Students without BC High School Math 12 should enroll in MATH 110, rather than MATH 100.

PSYC 221-3 Introduction to Cognitive Psychology
Introduction to the method and theory relevant to thinking and related processes. Includes an examination of memory, attention, concept formation, problem solving, consciousness and the relation of language to thought. (Lecture/Lab) Prerequisites: PSYC 100 and 102, (or PSYC 101). Students who have taken PSYC 320 may not register for PSYC 221.

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. (Lecture/Lab) Prerequisites: PSYC 100 and 102, (or PSYC 101). Students who have taken PSYC 340 may not register in PSYC 241.

PSYC 250-3 Child 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. (Lecture/Lab) Prerequisites: PSYC 100 and 102, (or PSYC 101). Students who have taken PSYC 350 or 351 may not register in PSYC 250.

PSYC 260-3 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. (Lecture/Lab) Prerequisites: PSYC 100 and 102, (or PSYC 101). Students who have taken PSYC 360 may not register for PSYC 260.
PSYC 270-3 Introduction to Personality
Introduces students to classic and contemporary theories, conceptual debates, and empirical research in the area of personality. (Lecture/Lab) Prerequisites: PSYC 100 and 102, (or PSYC 101).

PSYC 280-3 Biological Bases of Behavior
Surveys a variety of biological approaches to understanding behavior, including research from allied disciplines relevant to the biopsychological analysis of behavior. Includes: genetic basis of normal and abnormal behavior, psychobiology of development, intelligence, aggression, biological approaches to mental illness, learning disabilities, and the behavioral effects of drugs, hormones, biorhythms, brain damage, and environmental enrichment. (Lecture/Laboratory) Prerequisite: PSYC 100 and 102 (or PSYC 101). Recommended: BISC 101.

PSYC 300-3 Laboratory in Psychophysiology
The techniques of electrophysiological recording are demonstrated and learned. These include electroencephalography, electromyography, electrocardiography, electrodemography and other techniques for the measurement of physiological changes which are related to behavior. The recorded information is related to the behavioral and physiological conditions that influence their occurrence and form. (Lecture/Laboratory) Prerequisite: PSYC 201 and 280.

PSYC 301-3 Intermediate Research Methods and Data Analysis
A continuation of PSYC 201-3 and 210-3. 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. (Lecture/Laboratory) Prerequisites: PSYC 201 and 210.

PSYC 302-3 Learning
Conditions, principles, and theories of learning. Consideration of the acquisition and extinction of behavior. (Lecture/Laboratory) Prerequisites: PSYC 201.

PSYC 303-3 Perception
Conditions, principles, and theories of perception. Considers how individuals become aware of the structure and properties of their environment. Topics include perception of form, pattern, spatial relations, motion, causality, and time, and individual differences in perception. (Lecture/Laboratory) Prerequisites: PSYC 201, and 221 (or 320).

PSYC 304-3 Motivation
Conditions, principles and theories of motivation. Considerations of the initiation, direction and regulation of behavior. Animal and human data and the physiological bases of motivation are considered. (Lecture/Laboratory) Prerequisites: PSYC 201.

PSYC 306-3 Psychological Assessment Procedures
A survey of selected techniques for assessment of individual and group differences in aptitudes, abilities, achievement, attitudes, interests, and personality. Emphasis is placed on evaluating the effectiveness of various techniques, including performance tests, self-report questionnaires, inventories and projective approaches. This course provides a suitable introduction for students considering graduate training in clinical psychology. (Lecture/Laboratory) Prerequisites: PSYC 201.

PSYC 307-3 Historical Foundations of Psychology
Examines the development of psychological thought through theories of ontology, epistemology and ethics that laid the foundations for modern psychology. Provides a background for psychology courses by analysing how various viewpoints on the mind-body relationship, empiricism, rationalism and the nature of science contributed to the development of modern psychology. (Lecture/Tutorial) Prerequisites: PSYC 201.

PSYC 308-3 History and Systems of Modern 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. (Lecture/Tutorial) Prerequisites: PSYC 201.

PSYC 311-3 Psychological Measurement
Deals with basic problems in the development of psychological measures. Treatment of the concepts of reliability and validity and the application of these concepts in experimental and observational research. Implications of measurement principles for the
design of experiments and studies. Introduction to classical and contemporary methods in different content areas. (Lecture/Laboratory) Prerequisite: PSYC 201 and 210.

PSYC 321-3 Intelligence and Creativity
Surveys historical conceptions of the nature of intelligence, and reviews current theoretical and applied research concerning intelligence and creativity. Topics will include: the measurement of intelligence and creativity; the role of heredity and environment in their development; the relations among intelligence, creativity, and achievement; the social and political implications of theories of intelligence. (Lecture/Laboratory) Prerequisites: PSYC 201.

PSYC 325-3 Memory
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. (Lecture/Laboratory) Prerequisites: PSYC 201, and 221 (or 320).

PSYC 326-3 Psychology of Consciousness
Systematic consideration of consciousness as a psychological problem. Topics covered will include: the place of consciousness in the history of psychology; research on states of consciousness, e.g. dreaming, hypnosis, meditation, fantasy; research on the relationship between brain and consciousness; applications of consciousness research. (Lecture/Laboratory) Prerequisites: PSYC 201. Recommended: PSYC 221.

PSYC 330-3 Attention
Examines the processes of selective attention: how attention is located spatially; the role of attention in the perception of objects; automaticity; and the physiological mechanisms that mediate attentional processes. (Lecture/Lab) Prerequisites: PSYC 201, and 221 (or 320).

PSYC 335-3 Sensation
Considers the capabilities of the sensory systems, and the sensory bases of experience with reference to the characteristics of stimuli, the receptor mechanisms, the processes of transmission, and the concomitant neurophysiological processes. Consideration is also given to the problems of response indicators and the measurement of sensory magnitudes. (Lecture/Laboratory) Prerequisites: PSYC 201. Recommended: PSYC 280 and 300.

PSYC 342-0 Practicum I
First semester of work experience in the Psychology Co-operative Education program. Prerequisites: PSYC 201 and 210. Students should apply to the Co-op Co-ordinator one semester in advance.

PSYC 343-0 Practicum II
Second semester of work experience in the Psychology Co-operative Education program. Prerequisites: successful completion of PSYC 342-0 and 45 credit hours with a minimum CGPA of 3.0.

PSYC 345-3 Feeling and Emotion
Considers the conditions, principles and theories of the experiential and behavioral aspects of feeling and emotion as these relate to motivation, learning, perception, personality, psychosomatics, and social behavior. (Lecture/Laboratory) Prerequisites: PSYC 201.

PSYC 355-3 The Psychology of Adolescence and Youth
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. (Lecture/Laboratory) Prerequisites: 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. (Lecture/Laboratory) Prerequisites: PSYC 201, 241, and one of 250, 350 or 351.
PSYC 357-3 Psychology of 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. (Lecture/Laboratory) Prerequisites: PSYC 201 and 250 (or 350, or 351).

PSYC 366-3 Language Development
Treats language development from a psychological point of view. Topics include: origins of language in phylogeny, comparison between animal and human communication systems, and the acquisition of language in the first year of life. (Lecture/Laboratory) Prerequisites: PSYC 201.

PSYC 367-3 Experimental Psycholinguistics
Explores language comprehension and production from a psychological point of view. Topics include: the experimental analysis of the basic processes in the comprehension and production of speech, speech perception, reading, conversational analysis, pragmatics, and the relationship between language and thought. (Lecture/Laboratory) Prerequisites: PSYC 201.

PSYC 369-3 Law and Psychology
Introduces students to the area of law and psychology. The role of psychology in the legal system will be discussed. Topics include: socio; psychology and law, developmental psychology and law, juvenile justice, experimental psychology and law, mental disability and law, and the influence of psychology in the legal system. (Lecture/Tutorial) Prerequisites: PSYC 201.

PSYC 370-3 Theories of Personality
Reviews major theories of personality such as those of Freud, Jung, Rogers, Allport, Skinner, Bandura, and Kelly. The emphasis will be on comparisons of concepts; representative research will be considered in relation to each major theory (Lecture/Laboratory) Prerequisites: PSYC 201 and 270.

PSYC 373-3 Behavior Therapies
Considers the philosophy, theory, and practice of the behavior therapies. Theories of learning which have generated techniques for behavior change are critically examined and a broad range of techniques is reviewed with therapeutic efficacy the primary focus. The influence of cognitive psychology on behavior theory is also presented. (Lecture/Laboratory) Prerequisites: PSYC 201, and 241 (or 340), and 270 (or 370).

PSYC 375-3 Fundamentals of Clinical Psychology
Considers the scientific and clinical aspects of the discipline of clinical psychology. Both traditional roots and recent developments in the field are discussed. Topics include: models of clinical psychology, methods of assessment and modes of intervention and psychotherapy. Prerequisites: PSYC 201; and two of 241 (or 340); 270 (or 370); 306.

PSYC 381-3 Introduction to Physiological Psychology
A consideration of the physiological systems which control and regulate basic drives, including hunger, sex, thirst, sleep, and arousal. (Lecture/Tutorial) Prerequisite: PSYC 201 and 280.

PSYC 382-3 Physiology of Complex Behavior
A consideration of the central nervous systems which control and regulate higher order complex behavior. Emphasis on human data. The complex behavior considered includes learning, memory, and information processing, emotion, aggression and language. (Lecture/Tutorial) Prerequisite: PSYC 201 and 381. Recommended: PSYC 300.

PSYC 383-3 Drugs and Behavior
A survey of the field of psychopharmacology - the study of how drugs affect the brain, consciousness and behaviour. Topics will include cellular effects of drugs and consequences for psychological functions and social behavior. Theories of addiction and treatments for drug abuse will be covered as well as legal and societal issues in the area of drug regulation. History and research regarding both legal and illegal substances will be included, as will drug treatments for mental illness. (Lecture/Lab) Prerequisites: PSYC 201.
PSYC 385-3 Evolution and Social Behavior
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. (Lecture/Laboratory) Prerequisites: PSYC 201.

PSYC 388-3 Biological Rhythms and Behavior
Examines the role of biological clocks in the regulation of mammalian behavior and physiology, the mechanisms by which these clocks are synchronized to the environment, the physiological basis of clocks, and the relevance of rhythms to human psychopathology. (Lecture/Lab) Prerequisites: PSYC 201 and 280.

PSYC 402-5 Historical and Theoretical Issues in 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. (Seminar) Prerequisites: PSYC 201; and one of 207, 307, 308 and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 410-5 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. (Seminar) Prerequisites: PSYC 201, 210 and 301.

PSYC 411-5 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. (Seminar) Prerequisites: PSYC 201, 210 and 301. Recommended: PSYC 410.

PSYC 425-5 Language and Thinking
(Seminar) Prerequisites: PSYC 201, 210, 221 (or 320) and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 430-5 Perception
(Seminar) Prerequisites: PSYC 201, 210, 303 (or 230), and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 442-0 Practicum III
Third semester of work experience in the Psychology Co-operative Education program. Prerequisites: Successful completion of PSYC 342 and 343 and 60 semester hours with a minimum CGPA of 3.0.

PSYC 443-0 Practicum IV
Fourth semester of work experience in the Psychology Co-operative Education Program. Prerequisites: Successful completion of PSYC 442 and 75 semester hours with a minimum CGPA of 3.0.

PSYC 444-5 Psychopathology
(Seminar) Prerequisites: PSYC 201, 210, 241 (or 340) and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 450-5 Developmental Psychology
(Seminar) Prerequisites: PSYC 201, 210, 250 (or 351) and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 451-5 Psychology of Infancy
(Seminar) Prerequisites: PSYC 201, 210, 250 (or 351) and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.
PSYC 452-5 Social and Moral Development  
(Seminar) Prerequisites: PSYC 201, 210, 250 (or 351) and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 456-5 Psychology of Adulthood and Aging  
(Seminar) Prerequisites: PSYC 201, 210, 357, and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 459-5 Research Seminar in Developmental Psychology  
Provides experience in designing and conducting a developmental research study. Students will be expected to apply developmental methodology and theory to a particular research project. Specific content and methodological focus will vary.  
(Seminar) Prerequisites: PSYC 201, 210; two of PSYC 250 (or 351), 355, 356, 357, 450, 451, 452, 456; 60 hours of credit with a GPA of 3.0 or 90 hours of credit with a GPA of 2.5, and permission of the department.

PSYC 461-5 Attitudes, Social Cognition and the Self  
(Seminar) Prerequisites: PSYC 201, 210, 260 (or 360) and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 462-5 Interpersonal Relations and Group Processes  
(Seminar) Prerequisites: PSYC 201, 210, 260 (or 360) and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 465-5 Research Seminar in Social Psychology  
Examines methods of research in social psychology with particular emphasis on experimental design and procedures. Provides students with the opportunity to design and conduct social psychological research.  
(Seminar) Prerequisites: PSYC 201, 210, 260 (or 360), and 60 hours of credit with a GPA of 3.0 or 90 hours of credit with a GPA of 2.5.

PSYC 469-5 Psycholegal Issues  
This course will delve into specific topics within the area of psychology and law. Specific material addressed will vary according to the topic of the courses and the professor teaching it.  
(Seminar) Prerequisites: PSYC 210, 241 (or 340), 260 (or 360), 369 and 90 hours of credit or permission of the department.

PSYC 470-5 Personality  
(Seminar) Prerequisites: PSYC 201, 210, 270, 370 and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 480-5 Physiological Psychology  
(Seminar) Prerequisites: PSYC 201, 210, 381 (or 380), and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 485-5 Evolutionary Psychology and Sociobiology  
(Seminar) Prerequisites: PSYC 201, 210, 385, and 60 hours of credit and a CGPA of 3.0 or 90 hours of credit and a CGPA of 2.5.

PSYC 490-5 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 or co-requisite: PSYC 301.

Note: Open by special arrangement only to Psychology honors students who have completed at least 90 semester hour credits of university work, with at least 20 credits in upper division Psychology courses. A plan must be approved by the faculty supervisor and by the Undergraduate Studies Committee before work is begun.

PSYC 491-3 Selected Topics in Psychology  
(Seminar) Prerequisite: permission of the department.

PSYC 492-5 Selected Topics in Psychology  
(Seminar) Prerequisite: permission of the department.
PSYC 493-3, 494-3, 495-3 Directed Studies
Independent reading or research in topics selected in consultation with the supervising instructor. Prerequisites: PSYC 201 and permission of the department. Students should register for 493 the first time a 3 credit directed studies course is taken, and for 494 and 495 if further 3 credit directed studies courses on separate topics are taken.

PSYC 496-5, 497-5, 498-5 Directed Studies
Independent reading or research in topics selected in consultation with the supervising instructor. Prerequisites: PSYC 201 and permission of the department. Students should register for 496 the first time a 5 credit directed studies course is taken, and for 497 and 498 if further credit directed studies courses on separate topics are taken.

PSYC 499-5 Honors Project
The research proposed in PSYC 490 is executed and the results are written up in thesis format. Prerequisite: PSYC 301.

Department of Sociology and Anthropology
Location: 5054 Academic Quadrangle
Telephone: 778.782.3146
Chair: E. Gee BA, PhD (Br Col)

Affiliation with the two divisions within the department is shown as follows.
A - Anthropology
S - Sociology

Professors Emeriti
H. Dickie-Clark BA (Rhodes), PhD (Natal) - S
K. Peter BA, MA, PhD (Alta) - S
I.R. Whitaker MA (Camb), DPhil (Oslo) - A

Professors
H. Adam Dipl Sociol Dr Phil (Fran), Habilitation - S
N. Dyck BA, MA (Sask), PhD (Manc) - A
E. Gee BA, PhD (Br Col) - S, Chair of Department
M. Howard AB, MA, PhD (W Aust) - A
R.W. Wylie BA (Leic) - A

Associate Professors
I. Angus BA, MA (Wat), PhD (York) - S
M. Gates BA (Sheff), MA, PhD (Br Col) - A
M. Kenny BA, MA (Virginia), DipSocAnthrop, DPhil (Oxf) - A
A.T. McLaren BA (Br Col), MA (Iowa), PhD (Lond) - S
H. Sharma MA (Delhi), MS (Cleveland), PhD (C'nell) - S
G.B. Teeple BA, MA (Tor), DPhil (Sus) - S
J.M. Whitworth BA (Leic), DPhil (Oxf) - S

Assistant Professors
M. Boelscher-Ignace MA (Georg August Universitaet), PhD (S. Fraser) - A
D. Culhane BA, PhD (S Fraser) - A
P. Dossa BA, MA (Edin), PhD (Br Col) - A
K. Froschauer BA, MA (Br Col), PhD (Carl) - S
B. Gartrell BA (Br Col), MA (Leeds), PhD (CUNY) - A
D. Lacombe BA (Sherbrooke), MA, PhD (Tor)* - S
S. Pigg BA, MA, PhD (C'nell) - A
J. Pulkingham BA, MA, PhD (Edin) - S

Lecturer
C. Szafnicki MA (Lodz), PhD (Warsaw) - A
The Department of Sociology and Anthropology offers courses designed to provide students with the theoretical and analytical tools to better understand the social and cultural forces that affect our lives and the lives of people in other societies. Such understanding is an important part of general education and should lead to more effective participation in society. Both sociologists and anthropologists at Simon Fraser University are involved in research and teaching on Western industrial societies, on Third World societies, and on theoretical and comparative questions that go beyond national boundaries.

The department offers honors and major programs in sociology and/or anthropology and minor programs in sociology and anthropology. Honors and major students may take options such as an applied social research "stream" and a co-operative education program. Joint major/honor programs are available with Latin American Studies and Canadian Studies. The department also offers a Post Baccalaureate Diploma in Social Policy Issues and administers a Post Baccalaureate Diploma in Ethnic Relations.

As well as its intrinsic intellectual rewards, undergraduate training in sociology and anthropology provides invaluable background for students who intend to pursue careers in such fields as urban planning, journalism, law, public administration, welfare-related professions, teaching, personnel management, health care fields, and international development projects.

Courses offered by the department can provide students specializing in other disciplines with an appreciation of social and cultural processes that will complement their specialization. Especially appropriate are SA 100, 101, 150, 201, 263, 286, 292 and 293, which require no prerequisites. A number of other courses dealing with important contemporary issues, such as SA 202, 203, 216, 217, 218 and 260 are open to students with one introductory course.

Undergraduate courses
Course descriptions for all Sociology and Anthropology undergraduate courses.

Course Selection
Consult the current departmental handbook available in the SA general office, as there are differing emphases in course outlines from semester to semester.

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 courses.

A number of 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 taking additional courses in other departments, after consultation with a departmental advisor.

Many graduate schools require a reading knowledge of a language other than English. Those who may go on for graduate studies should include an appropriate second language in their program.

Note: To assist students in planning an interdisciplinary program, courses listed in the Undergraduate Courses are designated as follows.

A - Anthropology
S - Sociology

An SA course can be counted as either Sociology or Anthropology.
Major Programs

General Requirements
Lower division requirements provide students with a broad introduction to both disciplines, to the critical analysis of Canadian society, to the basic logic and methods used in social research, and to the application of these methods to topics of special interest to the student.

Students should complete all lower division requirements before proceeding to upper division courses.

Lower Division Requirements
Students must complete 23 semester hours in lower division courses. The following required courses must be included.

SA 100-4 Perspectives on Canadian Society
SA 101-4 Introduction to Anthropology
SA 150-4 Introduction to Sociology
SA 255-4 Introduction to Social Research
STAT 103-3 Introduction to Statistics for Social Sciences*

*Students with an equivalent post-secondary statistics course are exempt from this course.

In choosing lower division courses, students should keep in mind the prerequisite requirements for upper division courses.

Upper Division Courses
Students must meet requirements in theory and methods courses detailed below. (See program options following for specific requirements.) In our increasingly information-based society, many employers and most graduate schools require considerable knowledge of the processes involved in conceptualizing research problems, information gathering, analysis and presentation. Students are strongly urged to prepare by balancing theory courses with methods courses over and above the required minimum. Beyond this minimum, they may choose to range broadly across the two disciplines or to focus on a special interest. Courses fall broadly into the following groups.

Sociological Theory and Institutions of Social Life
SA 300-4 Canadian Social Structure
SA 304-4 Social Control
SA 322-4 Sociology of Religion
SA 325-4 Political Sociology
SA 327-4 Sociology of Knowledge
SA 333-4 Schooling and Society
SA 350-4 Classical Sociological Thought
SA 351-4 Classical Marxist Thought
SA 358-4 The Philosophy of the Social Sciences
SA 362-4 Society and the Changing Global Division of Labor
SA 416-4 Sociology of Art Forms
SA 450-4 Advanced Sociological Theory

Anthropological Theory and Institutions of Social Life
SA 301-4 Key Ideas in Anthropology
SA 323-4 Symbol, Myth and Meaning
SA 332-4 The Anthropology of Domestic Life
SA 364-4 Urban Communities and Cultures
SA 368-4 Economic Processes in Social Life
SA 401-4 The Politics of Culture in Contemporary Societies
SA 402-4 The Uses of Anthropology
SA 451-4 Advanced Anthropological Theory
SA 467-4 Anthropology of the Self
SA 371-4 The Environment and Society
SA 472-4 Ethnohistory
Ethnic Relations
SA 203-4 Comparative Ethnic Relations
SA 303-4 Ethnic Conflicts
SA 400-4 Canadian Ethnic Minorities

Canadian Native Peoples and Other Minority Indigenous Peoples
SA 286-4 Native Cultures of British Columbia
SA 386-4 Native Peoples and Public Policy
SA 387-4 Canadian Native Peoples
SA 388-4 Comparative Studies of Minority Indigenous Peoples
SA 486-4 Issues in Northwest Coast Studies

Third World Studies
SA 263-4 Peasants, Proletarians and the Global Economy
SA 363-4 Processes of Development and Underdevelopment
SA 368-4 Economic Processes in Social Life
SA 374-4 South Africa: Socio-Political Development
SA 392-4 Latin America
SA 463-4 Special Topics in Development Studies
SA 480-4 Southern Asia

Sociology Major Program
In addition to the lower division requirements specified earlier (see General Requirements), students must complete 32 semester hours in upper division SA courses, 20 of which must be in Sociology, with the remaining 12 semester hours in Anthropology.

Theory Requirement
Theory requirements should be taken as early as possible in the student's upper level program. Sociology majors must take the following course.

SA 350-4 Classical Sociological Thought

Methods Requirements
Methods requirements should be taken as early as possible in the student's upper level program. Sociology majors must take one of the following courses.

POL 315-4 Quantitative Methods in Political Science
SA 355-4 Quantitative Methods

and one of
SA 356-4 Qualitative Methods
SA 357-4 Survey Methods

Note: Students are strongly urged to balance theory courses with methods courses over and above the required minimum.

Anthropology Major Program
In addition to the lower division requirements specified earlier (see General Requirements), students must complete 32 semester hours in upper division SA courses, 20 of which must be in Anthropology, with the remaining 12 semester hours in Sociology.

Theory Requirement
Theory requirements should be taken as early as possible in the student's upper level program. Anthropology majors must take the following course.

SA 301-4 Key Ideas in Anthropology
Methods Requirements
Methods requirements should be taken as early as possible in the student's upper level program. Anthropology majors must take the following course.

SA 356-4 Qualitative Methods
SA 355 and 472 are strongly recommended.

Note: Students are strongly urged to balance theory courses with methods courses over and above the required minimum.

Applied Social Research Program
Students wishing a broader preparation in research methods may choose this special stream. Please see the departmental advisor for details.

Joint Major in Sociology and Anthropology
In addition to lower division requirements specified earlier (see General Requirements), 40 semester hours in upper division SA courses must be completed, 20 of which must be in Sociology and 20 in Anthropology.

Theory Requirements
Theory requirements should be taken as early as possible in the student's upper level program. Sociology/Anthropology joint majors must take the following courses.

SA 301-4 Key Ideas in Anthropology
SA 350-4 Classical Sociological Thought

Methods Requirements
Methods requirements should be taken as early as possible in the student's upper level program. Sociology/Anthropology joint majors must take one of the following courses.

POL 315-4 Quantitative Methods in Political Science
SA 355-4 Quantitative Methods and
SA 356-4 Qualitative Methods

Note: Students are strongly urged to balance theory courses with methods courses over and above the required minimum.

Other Joint Major Programs

Sociology or Anthropology and Canadian Studies
See the Department of Canadian Studies section for requirements.

Sociology or Anthropology and Latin American Studies

Lower Division Sociology and Anthropology Requirements
SA 100-4 Perspectives on Canadian Society
SA 101-4 Introduction to Anthropology
SA 150-4 Introduction to Sociology

Students are also required to complete a minimum of two 200 division courses.

Upper Division Sociology and Anthropology Requirements
Students must complete the following.
20 semester hours in Sociology or
20 semester hours in Anthropology

See the Department of Spanish and Latin American Studies section for complete requirements.

Honors Programs

General Requirements
See General Requirements under Major Programs.

Sociology Honors Program
In addition to the Lower Division Requirements specified earlier (See Major Program, General Requirements), students must complete 52 semester hours in upper division SA courses, 32 hours of which must be in Sociology, with the remaining 20 semester hours in Anthropology.

A GPA of 3.33 in all SA courses is required for admission to, and graduation from, the honors program. In addition, honors students must complete SA 499.

Theory Requirements
Please refer to Theory Requirements, Sociology Major Program. Theory requirements should be taken as early as possible in the upper level program.

Methods Requirements
Please refer to Methods Requirements, Sociology Major Program. Methods requirements should be taken as early as possible in the upper level program.

Note: Students are strongly urged to balance theory courses with methods courses over and above the required minimum.

Anthropology Honors Program
In addition to the lower division requirements specified earlier (see Major Program, General Requirements), students must complete 52 semester hours in upper division SA courses, 32 semester hours of which must be in Anthropology, with the remaining 20 semester hours in Sociology.

A GPA of 3.33 in all SA courses is required for admission to, and graduation from, the honors program. In addition, honors students must complete SA 499.

Theory Requirements
Please refer to Theory Requirements, Anthropology Major Program. Theory requirements should be taken as early as possible in the upper level program.

Methods Requirements
Refer to Methods Requirements, Anthropology Major Program. Methods requirements should be taken as early as possible in the upper level program.

Note: Students are strongly urged to balance theory courses with methods courses over and above the required minimum.

Joint Honors in Sociology and Anthropology
In addition to the lower division requirements specified earlier (see Major Program, General Requirements), students must complete 60 semester hours in upper division SA courses, 32 semester hours of which must be in one discipline, with the remaining 28 semester hours in the other discipline.

A GPA of 3.33 in all SA courses is required for admission to, and graduation from, the honors program. In addition, honors students must complete SA 499.
Theory Requirements
Please refer to Theory Requirements, Joint Major in Sociology and Anthropology. Theory requirements should be taken as early as possible in the upper level program.

Methods Requirements
Refer to Methods Requirements, Joint Major in Sociology and Anthropology. Theory requirements should be taken early in the upper level program.

Note: Students are strongly urged to balance theory courses with methods courses over and above the required minimum.

Other Joint Honors Programs

Sociology or Anthropology and Canadian Studies
See the Canadian Studies section for requirements.

Sociology or Anthropology and Latin American Studies
See the Department of Spanish and Latin American Studies section for requirements.

Minor Programs

Sociology Minor Program
Students must complete 12 semester hours in lower division SA courses, eight which must be in Sociology, and 16 in upper division Sociology courses.

Anthropology Minor Program
Students must complete 12 semester hours in lower division SA courses, eight which must be in Anthropology, and 16 in upper division Anthropology courses.

Extended Minor Program
An extended general minor program consists of lower division requirements for a major and 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.

Post Baccalaureate Diplomas

Post Baccalaureate Diploma in Ethnic and Intercultural Relations
This program is for students who have already completed a Bachelors degree. The program may be completed through a combination of distance education courses, on-campus and Simon Fraser University at Harbour Centre.

Ethnic and Intercultural Relations is the study of ethnically defined conflicts and problems of migration. Such conflicts arise from the ascription of demeaning characteristics to groups of people and, more importantly, result from exclusion. The program provides an opportunity to explore the causes of unequal treatment, to compare ethnic antagonisms internationally and to develop strategies to improve intergroup relations in Canada in light of this knowledge.

The program is intended for human services professionals (social workers, educators, police, counsellors, personnel managers, health practitioners or civil servants) who are required to perform effectively with clients from a variety of cultural and linguistic backgrounds. It seeks to foster better understanding of the nature of the multi-ethnic society in which we live and work.

For information about the Post Baccalaureate Diploma program general regulations, refer to Continuing Studies.

Program Requirements
Successful completion of an approved program comprised of 30 semester hours of third and fourth year courses.
Required Courses
SA 340-4 Social Issues and Social Policy Analysis
SA 345-4 Issues in Canadian Ethnic Relations

and two of
CRIM 311-3 Minorities and the Criminal Justice System
EDUC 441-4 Multicultural Education
HIST 322-3 Atlantic Migration
POL 481-3 Ethnic Politics and National Identity: Comparative Perspectives
SA 303-4 Ethnic Conflicts
SA 386-4 Native Peoples and Public Policy
SA 400-4 Canadian Ethnic Minorities

Optional Courses
CMNS 322-4 Communication in Conflict and Intervention
CRIM 335-3 Human Rights and Civil Liberties
CRIM 419-3 Native North Americans: Crime, Deviance and Criminal Justice
GEOG 420-4 Comparative Cultural Geography
HIIT 326-3 The History of Native People in Canada
SA 319-4 Culture, Ethnicity, and Aging
SA 374-4 South Africa: Socio-Political Development
SA 387-4 Canadian Native Peoples
SA 388-4 Comparative Studies of Minority Indigenous Peoples

Students in the program will also be advised of any additional courses dealing with ethnic relations that may become available from time to time and which may be taken for credit.

Completion of the diploma must be achieved within five years of admission. Students must maintain a GPA of 2.5 on courses applied toward this diploma.

Acceptance of general Simon Fraser University admission does not automatically guarantee admission to the Post Baccalaureate Diploma program. Students must apply for entry directly to the Department of Sociology and Anthropology.

Post Baccalaureate Diploma in Social Policy Issues
This program is available for students who have already completed a Bachelors degree and may be completed through distance education courses, on-campus and at Simon Fraser University at Harbour Centre. It offers an opportunity to apply recent developments in social theory and research methods to the investigation of a range of social programs and social policy issues. As well as featuring courses which examine various substantive social policy issues, the overall program aims to provide the critical perspectives needed in order to grasp the processes by which social problems are defined, understood, and acted upon both in Canada and in other societies.

For information about the Post Baccalaureate Diploma program general regulations, refer to Continuing Studies.

Program Requirements
Successful completion of an approved program comprised of 30 semester hours of third and fourth year courses, at least 16 are to be taken from the set of core courses described below.

Core Courses
Students are required to complete at least four of the following courses, one of which must be SA 340.

SA 303-4 Ethnic Conflicts
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 Native Peoples and Public Policy  
SA 420-4 Sociology of Aging

Optional Courses
An additional four courses from the following list would complete the requirements for the program.

POL 321-3 The Canadian Federal System  
POL 352-3 Canadian Local and Urban Government and Politics  
POL 451-3 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 401-4 The Politics of Culture in Contemporary Societies  
SA 400-4 Canadian Ethnic Minorities  
SA 402-4 The Uses of Anthropology  
SA 463-4 Special Topics in Development Studies

To fulfill the optional course requirement, students may instead take additional core courses, or upon the Program Steering Committee's recommendation, select a course not included among listed options, but with content appropriate to the program.

Students must attend occasional special lectures, seminars and professional development workshops organized for those enrolled in the diploma program.

Acceptance of general Simon Fraser University admission does not automatically guarantee admission to this program. Students must apply for entry directly to the Department of Sociology and Anthropology.

Certificate Program

Certificate in Native Studies Research
Please refer to the Faculty of Arts section for details of this certificate program.

Co-operative Education Program
The Department of Sociology and Anthropology offers a Co-operative Education Program for students wishing practical experiences in the social sciences. The program entails planned study semesters and employment in an area of the student's choice.

Requirements
To be admitted into the program, students must have completed 29 hours with a minimum CGPA of 2.75. 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

and one of  
SA 202-4 Post-Industrial Society  
SA 203-4 Comparative Ethnic Relations  
SA 263-4 Peasants, Proletarians and the Global Economy
College transfer students must complete at least 15 semester hours at Simon Fraser University before becoming eligible for admission to the Co-op Program. They also must satisfy the requirements above or their equivalents.

College transfer students who have participated in co-op programs elsewhere may be credited with the semester(s) already taken. The applicability of such semesters depends on the evaluation of the Department of Sociology and Anthropology.

Arrangements for the work semesters are made through the department's Co-op Co-ordinator, and the Faculty of Arts Co-op Co-ordinator.

In order to continue in the Co-operative Education Program, students must maintain a minimum cumulative GPA of 2.75 in their course work.

For details, refer to Co-operative Education. Interested students should contact the Department of Sociology and Anthropology for further information.

**Sociology and Anthropology Undergraduate Courses**

**Faculty of Arts**

*Note: To assist the student in planning an interdisciplinary program, the discipline designates are listed as follows. (S) - Sociology (A) - Anthropology An (SA) course, therefore, counts as either Sociology or Anthropology.*

**SA 100-4 Perspectives on Canadian Society (SA)**
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. (Lecture/Tutorial)

**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. (Lecture/Tutorial) Students with credit for SA 170 may not take SA 101 for further credit.

**SA 141-0 Sociology and Anthropology Practicum (SA)**
This is the first semester of work experience in the Co-operative Education Program in Sociology and Anthropology. It is meant to be exploratory in nature. Prerequisite: 29 semester credit hours with a minimum cumulative GPA of 2.75 including SA 101, 150, 201 or 250, 255 and one of SA 202, 203, 263. Students should apply to the Faculty of Arts Co-op Co-ordinator by the end of the third week of the semester preceding the employment semester.

**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. (Lecture/Tutorial)

**SA 201-4 Anthropology of Contemporary Life (A)**
An introduction to the anthropological perspective as applied to contemporary social and cultural issues and settings. Topics may include: urban anthropology; work and leisure; belief systems; medical anthropology; and problems of policy relevant research. (Lecture/Tutorial) Prerequisite: SA 101 recommended. Students with credit for SA 291 may not take SA 201 for further credit.

**SA 202-4 Post-Industrial Society (S)**
An analysis of the social implications of the transformation from classical industrial production to computer-aided design, manufacturing, processing and retailing. The course will examine changing labor processes and the new division of labor, the challenge to trade unions, the decline of the welfare state, the post modern condition and the globalization of economic life. (Lecture/Tutorial) Prerequisite: SA 150.
SA 203-4 Comparative Ethnic Relations (SA)
A comparative study of racial and ethnic relations. The course will deal with a variety of beliefs about others and different patterns of discrimination in a number of societies. The inevitability of such beliefs and practices and the means of altering them may also be examined. (Lecture/Tutorial) Prerequisite: SA 150.

SA 216-4 Sociology of Leisure (S)
An examination of the changing nature and significance of leisure in contemporary society. Various forms of leisure are discussed in relation to other social institutions and processes, such as religion, politics, family and work. Issues raised by the commercialization and commoditization of mass leisure are explored. (Lecture/Tutorial) Prerequisite: SA 150. Students with credit for SA 315 may not take SA 216 for further credit.

SA 217-4 Conflict, Violence and War (SA)
Provides a sociological and comparative framework for the study of phenomena such as inter-group conflict, organized and collective violence and international wars. Terrorism as a contemporary form of inter-group conflict will be examined. Other topics to be explored are: the military industrial complex, nuclear arsenal, disarmament, and the peace movement. (Lecture/Tutorial) Prerequisite: SA 150. Students with credit for SA 292 and 293 (on a war-related topic) may not take SA 217 for further credit.

SA 218-4 Illness, Culture and Society (SA)
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. (Lecture/Tutorial) Prerequisite: SA 101 or 201 or 150. Students with credit SA 460 when offered as Medical Anthropology may not take SA 218 for further credit.

SA 231-4 The Sociology of Domestic Life (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, the economy, the state and social policies. (Lecture) Prerequisite: SA 150.

SA 241-0 Sociology and Anthropology Practicum II (SA)
This is the second semester of work experience in the Co-operative Education Program in Sociology and Anthropology. Building on the experiences of the first employment semester, this semester will provide a work experience that integrates theory and practice of the social sciences. Prerequisite: successful completion of SA 141 and normally the completion of at least 45 semester credit hours with a minimum cumulative GPA of 2.75. Students should apply to the Faculty of Arts Co-op Co-ordinator by the end of the third week of the semester preceding the employment semester.

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. (Lecture/Tutorial) Prerequisite: SA 150.

SA 255-4 Introduction to Social Research (SA)
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. (Lecture/Tutorial) Prerequisite: SA 101 or 150. Students with credit for POL 213 may not take SA 255 for further credit.

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. (Lecture/Tutorial) Prerequisite: SA 150.

SA 263-4 Peasants, Proletarians and the Global Economy (A)
An introduction to the anthropology of peoples in agrarian and newly industrializing societies. Topics may include: relations between peasants and others in agrarian societies, transformation of peasants into urban proletarians; sources of social
differentiation and increasing poverty and unrest. (Lecture/Tutorial) Prerequisite: SA 101 recommended. Students with credit for SA 280 may not take SA 263 for further credit.

SA 275-4 China: Sociological and Anthropological Perspectives (SA)
An examination of the social, cultural, economic and political institutions of modern China, and the processes of social change shaping them. The emphasis will vary from semester to semester. (Lecture/Tutorial) Prerequisite: SA 101 or 150.

SA 286-4 Native Cultures of British Columbia (A)
A study of selected Native peoples of British Columbia in terms of ecological adaptation and social organization. Topics may include: continuity and change in traditional ceremonial complexes; art; political processes. (Lecture/Tutorial) Prerequisite: SA 101 recommended. Students with credit for SA 140 may not take SA 286 for further credit. This course is taught as part of the B.C. Studies program.

SA 292-4 Special Topics in Sociology (S)
An introduction to the discipline and perspective of sociology through analysis of an issue, process or problem with topical interest or general relevance. (Lecture/Tutorial)

SA 293-4 Special Topics in Anthropology (A)
An introduction to the discipline and perspective of anthropology through analysis of an issue, process or problem with topical interest or general relevance. (Lecture/Tutorial) Prerequisite: SA 101 recommended.

Note: In special cases, for courses numbered 300 and above (excluding 496 through 499 inclusive) the stated prerequisite may be waived with permission of the department or instructor. Students requiring such waivers must consult with the Departmental Assistant.

SA 300-4 Canadian Social Structure (SA)
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. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course; SA 100 recommended.

SA 301-4 Key Ideas in Anthropology (A)
A consideration of basic themes in anthropological thought with respect to their historical origins and theoretical structures. Methodological problems in the interpretation of cross-cultural materials. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293. Students with credit for SA 370 may not take SA 301 for further credit.

SA 303-4 Ethnic Conflicts (SA)
An analysis of the origins, expression and attempted solutions of conflicts in ethnically divided societies. Depending upon the area of focus, such contentious issues as education, political representation, religious divisions, labor policies, and formal and informal mechanisms of segregation will be considered. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course; SA 203 recommended.

SA 304-4 Social Control (S)
An examination of social theories and perspectives pertaining to social control in modern societies. Attention will be paid to both formal, overt control systems and techniques and to less obvious systems of control which, although not always recognized as such, play a major role in eliciting compliance and structuring individual and group action. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course.

SA 316-4 Tourism and Social Policy (SA)
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. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course.
SA 318-4 The Anthropology of Medicine
An examination from a cross-cultural perspective of the social and ideological organization of health and healing. The role of medicine as a mediator between society and the body will be considered through an examination of the socio-cultural underpinnings of both biomedicine in the West and alternative medical systems. Topics may include: cultural variation in definitions of illness; medical pluralism in complex societies; medical authority and social control; the relation between health and gender, age, class, and ethnic identity. (Seminar) Prerequisites: SA 101 and 218.

SA 319-4 Culture, Ethnicity and Aging (SA)
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. (Lecture/Seminar) Prerequisites: SA 101 or 150 and either one second year Sociology or Sociology/Anthropology course, or acceptance into the Gerontology Diploma Program.

SA 320-4 Population and Society (SA)
A study of the reciprocal influence of population and social structure and demographic attempts to use population variables in social explanation; a discussion of cultural and institutional influences on human populations with respect to fertility, mortality and migration. (Lecture/Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course.

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. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course.

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. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course.

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. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293.

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. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course.

SA 327-4 Sociology of Knowledge (S)
An examination of sociological theories concerning the interaction of social structures, and meaning and belief systems. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course. SA 250 recommended.

SA 332-4 The Anthropology of Domestic Life (A)
The study of descent, kinship, marriage and the domestic domain in cross-cultural and historical perspective. Topics to be considered could include: the economic and political context of kinship; the social definition of childhood, adulthood, and old-age; the nature and function of marriage. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293.

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, employment, and social policy. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course.
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. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course. WS 203 recommended. Students with credit for SA 292 (when offered as gender relations) may not take SA 335 for further credit.

SA 340-4 Social Issues and Social Policy Analysis (SA)
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. (Seminar) Prerequisites: SA 150 and either SA 101 or one other lower division (A) course.

SA 341-0 Sociology and Anthropology Practicum III (SA)
This is the third semester 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. Prerequisites: successful completion of SA 241 and normally the completion of at least 61 semester hours with a minimum cumulative GPA of 2.75. Students should apply to the Faculty of Arts Co-op Co-ordinator by the end of the third week of the semester preceding the employment semester.

SA 345-4 Issues in Canadian Ethnic Relations
A survey of current issues in ethnic and intercultural relations in Canada, considered in the context of demographic trends and policy development. (Seminar) Prerequisites: any two of the following: SA 101, 150, 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. (Seminar) Prerequisite: SA 250.

SA 351-4 Classical Marxist Thought (SA)
A detailed study of classical Marxist social thought. (Seminar) Prerequisite: SA 250.

SA 355-4 Quantitative Methods (SA)
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. (Seminar) Prerequisites: STAT 103 or equivalent and SA 255 or POL 213. Students with credit for SA 355 may not take POL 315 for further credit.

SA 356-4 Qualitative Methods (SA)
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. (Seminar) Prerequisite: SA 255 and 101 or 201.

SA 357-4 Survey Methods (SA)
Students will formulate a research problem suited to a quasi-experimental (survey) design, and perform all the research steps needed for its completion. (Seminar) Prerequisites: SA 255 and 355.

SA 358-4 The Philosophy of the Social Sciences (SA)
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. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course; SA 250 and 255 recommended.
SA 360-4 Special Topics in Sociology and Anthropology (SA)
A seminar exploring a topic not regularly offered by the department. The disciplinary designation will change to reflect specific topics; refer to each semester's course booklet. (Seminar) Prerequisites: SA 101 and 150, plus one second-year sociology, anthropology or sociology/Anthropology course.

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, trans-national political agencies and public policy, the internationalization of culture, the global labor market, the 'world city' hypothesis, ethnic resurgence and alternatives to these developments. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course. SA 202 strongly recommended.

SA 363-4 Processes of Development and Underdevelopment (SA)
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. (Seminar) Prerequisites: SA 250 or SA 101 and one of SA 201, 263, 286 or 293. SA 263 is strongly recommended.

SA 364-4 Urban Communities and Cultures (SA)
Anthropological approaches to urbanization, the nature of the city as a social system, and urban cultures and lifestyles. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293. Students with credit for SA 464 may not take SA 364 for further credit.

SA 368-4 Economic Processes in Social Life (SA)
Anthropological perspectives on processes of production, distribution, exchange and consumption. Differing theoretical approaches will be reviewed through an examination of selected case studies. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293.

SA 371-4 The Environment and Society (SA)
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. Content may differ from semester to semester. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293.

SA 374-4 South Africa: Socio-Political Development (SA)
An exploration of the socio-political transformation of South Africa and the legacy of apartheid. Inter-ethnic relations and nation-building are compared with nationalist conflicts in other divided societies; constitutional experiments with power sharing and corporatism are assessed. (Seminar) Prerequisites: SA 101 or 150 and one second year Sociology or Anthropology course, or permission of instructor. Students with credit for SA 477 may not take SA 374 for further credit.

SA 386-4 Native Peoples and Public Policy (SA)
An examination of relations between Natives and non-Natives, indigenous peoples and governments in Canada. The consequences of these relations for the lives of Native peoples. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 and 293.

SA 387-4 Canadian Native Peoples (SA)
The study of traditional and contemporary Canadian Native peoples. The focus of the course will vary from semester to semester. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293.
SA 388-4 Comparative Studies of Minority Indigenous Peoples (SA)
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. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293.

SA 392-4 Latin America (SA)
An introduction to the peoples and institutions of Latin America in historical and contemporary perspective, emphasizing macro-level patterns of similarity and diversity. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293. Students with credit for SA 391 may not take this course for further credit.

SA 396-4 Selected Regional Areas (SA)
An examination of selected aspects of social structure, culture and processes of social change in a specific regional area. The focus will vary from semester to semester. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293.

SA 400-4 Canadian Ethnic Minorities (SA)
An analysis of specific Canadian ethnic minorities. The groups will be studied in the context of the wider literature of race relations and ethnicity. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course; SA 203 and 300 recommended. Students with credit for SA 401 prior to the Fall of 1987 may not take this course for further credit.

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. (Seminar) Prerequisite: SA 301; SA 356 highly recommended.

SA 402-4 The Uses of Anthropology (A)
An examination of the ways in which anthropology is used to affect action in the world. Topics may include: advocacy anthropology; the development and practice of applied anthropology; the emergence of anthropology as a form of cultural critique. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293. At least two upper division courses in Anthropology are strongly recommended.

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. (Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course.

SA 420-4 Sociology of Aging (SA)
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. (Lecture/Seminar) Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course, or acceptance into the Diploma Program in Gerontology.

SA 441-0 Sociology and Anthropology Practicum IV (SA)
This is the last semester 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. Prerequisites: successful completion of SA 341 and normally the completion of at least 77 semester credit hours with a minimum cumulative GPA of 2.75. Students should apply to the Faculty of Arts Co-op Co-ordinator by the end of the third week of the semester preceding the employment semester.

SA 447-4 Selected Issues in Social Policy Analysis (SA)
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. (Seminar) Prerequisite: SA 150 and one second year Sociology or Sociology/Anthropology course (or permission of the instructor). SA 340 strongly recommended.
SA 450-4 Advanced Sociological Theory (S)
A senior seminar on current perspectives in sociological theory. Emphasis will differ from semester to semester. (Seminar) Prerequisite: SA 350, 90 credit hours, a GPA of at least 3.25 and consent of the instructor.

SA 451-4 Advanced Anthropological Theory (A)
A senior seminar on current perspectives in anthropological theory. Emphasis will differ from semester to semester. (Seminar) Prerequisites: SA 301, 90 credit hours, a GPA of at least 3.25 and consent of the instructor.

SA 455-4 Special Topics in Applied Social Research (SA)
An advanced seminar devoted to special topics in applied social research. (Seminar) Prerequisites: SA 255 and SA 355 or 356.

SA 460-4 Special Topics in Sociology and Anthropology I (SA)
An advanced seminar devoted to an in-depth examination of a topic not regularly offered by the department. The disciplinary designation will change to reflect specific topics; refer to each semester's course booklet. (Seminar) Prerequisites: at least two upper division courses in Sociology and/or Anthropology recommended.

SA 463-4 Special Topics in Development Studies (SA)
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 peasancies; directed change programs. (Seminar) Prerequisites: SA 250 or 101 and one of SA 201, 263, 286 or 293. SA 363 is strongly recommended.

SA 467-4 Anthropology of the Self (A)
Cross-cultural explorations in the social construction of selfhood. The comparative study of indigenous theories about the mind, body, gender and self. These beliefs will be considered in relation to social structure and western psychology theory. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293.

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. (Seminar) Prerequisites: SA 301 or 350, or consent of the instructor.

SA 480-4 Southern Asia (SA)
Prerequisite: Permission of the department. Prior exposure to topic strongly recommended.

SA 486-4 Issues in Northwest Coast Studies (A)
The examination of theoretical and methodological issues in Northwest Coast Studies. The focus will vary from semester to semester. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293. SA 286 is strongly recommended.

SA 495-4 Selected Regional Areas (SA)
An examination of selected aspects of the social structure, culture and the processes of social change in a specific regional area. The focus will vary from semester to semester. (Seminar) Prerequisites: SA 101 and one of SA 201, 263, 286 or 293.

Normally, only majors in the Department of Sociology and Anthropology may take SA 496 or 497. The signature of a faculty member, who is willing to supervise the course, must be obtained prior to registration.

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. Prerequisites: SA 101 and one of SA 201, 263, 286 or 293. 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.
Prerequisites: SA 150 and one second year Sociology or Sociology/Anthropology course. Students with credit for SA 496 may not take SA 497 for further credit.

All honors students must take SA 499, normally after completing 120 hours of credit. This course is not available to students completing a general degree.

SA 499-8 Honors Essay (SA)

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. On completion, the essay is to be defended orally in a departmental seminar.

Department of Spanish and Latin American Studies
Location: 5102 Academic Quadrangle
Telephone: 778.782.4774
Chair: (to be announced)

Professors
J. Garcia Prof Lit (Peru), MA (Alta), Doct Cert (Madrid)
A. Gomez-Moriana Lic, PhD (Salamanca), MA, PhD (Munich)
T.J. Kirschner BA (Roosevelt), MA, PhD (Chic)

Associate Professor
R. DeGrandis Prof Lit (Rosario), MA (S Fraser), PhD (Montr)
G. Otero BA (Monterrey), MA (Tex), PhD (Wis)

Assistant Professors
D. Clavero Prof Hist (Zaragoza), MA, PhD (Br Col)
J.M. Sosa Prof Lit&Ling (Venezuela Central), MA (Lond), PhD (Mass)
G. Spurling BA (S Fraser), MA, PhD (C'nell)

Adjunct Professor
G. Knox BA (NZ), MA (S Carolina)

Associated Faculty
R. Anderson, Communication
R.E. Boyer, History
J. Brohman, Geography
A. Ciria, Political Science
M. Gates, Anthropology
L. Harasim, Communication
M. Hayes, Geography
M. Howard, Sociology and Anthropology
L. Lesack, Geography
R.C. Newton, History
P.L. Wagner, Geography, Emeritus

Lecturer
M. Escudero-Faust BA, MA (S. Fraser), PhD (Br Col)

Advisor
Ms. N. Ludington, 5102A Academic Quadrangle, 778.782.4790
The Department of Spanish and Latin American Studies offers courses for students wishing to specialize in the study of the language and literature of Spain and Latin America, and/or in the study of contemporary Latin America from a multidisciplinary perspective. The programs are designed to provide a sound background for students intending to pursue careers in teaching, translation, journalism, travel, community relations, law, diplomacy, government, international trade, international development projects, as well as those intending to pursue advanced scholarly work. An integral complement to the degrees offered is the multidisciplinary Field School in Latin America.

**Spanish Program**
All students must meet the requirements for the Bachelor of Arts degree described under the Faculty of Arts section of this calendar.

**Undergraduate courses**
Course descriptions for all Spanish undergraduate courses.

**Challenge Credit**
Up to 12 semester hours of lower division Spanish courses may be challenged for credit. These courses include only SPAN 102, 103, 201 and 202. Students wishing to challenge any/or all of these courses must register in the courses to be challenged and any following 300 or 400 division course taught in Spanish. A grade of at least a C in the 300 or 400 division course must be obtained to receive the challenge credit.

**Language Course Placement**
Students with knowledge of the Spanish language should take a short test in order to be placed in a language course best suited to their abilities in Spanish. The test is also used to advise students of the possibility of obtaining advance placement or challenge credit. Please note that students will not usually be able to take courses below the level in which they have been placed. Native speakers of Spanish or students who received their secondary education entirely within a Spanish-speaking community will not normally be admitted to a 100 or 200 level Spanish language course.

Consult the Course Timetable and Registration Instructions tabloid for the placement test schedule for the upcoming semester.

**Major Program**
All students completing a major in Spanish must have their programs approved by the department. For a degree in Spanish, the following courses 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
- SPAN 220-3 Introduction to Spanish Linguistics
- SPAN 240-3 Introduction to Hispanic Literature

one of
- LAS 100-3 Images of Latin America
- LAS 140-3 Cultural Heritage of Latin America

Students must also complete 30 semester hours of upper division Spanish courses including the following.

- SPAN 349-3 Basic Texts in Hispanic Literature I
- SPAN 350-3 Basic Texts in Hispanic Literature II

**Honors Program**
Spanish Honors students must have their programs approved by the department. Lower division requirements as listed above for the Spanish major must be completed and 50 upper division semester hours including SPAN 349, 350 and 465 is also required. Students must acquire a proficiency (ie. the equivalent of two semesters) in an additional language other than English.
Minor Program
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 240-3 Introduction to Hispanic Literature

Students must also complete 15 hours of upper division Spanish courses.

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.

Joint Major in Spanish and Latin American Studies
Students must complete 20 upper division semester hours in Spanish, and 20 upper division semester hours in Latin American Studies for this joint major.

Joint Major in French and Spanish
The Department of French and the Department of Spanish and Latin American Studies offer this joint major which leads to a Bachelor of Arts. It is designed for those interested in exploring the linguistic, literary and cultural affinities between these two areas of study.

Students contemplating this joint major must develop, with the help of a supervisor in French and/or Spanish, a coherent program with a concentration in either the literature or linguistics of these two languages.

French Requirements
FREN 151-4 French I
FREN 201-3 Intermediate French I
FREN 202-3 Intermediate French II
(or exemption from these courses: FREN 151, 201, 202)
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

Students must also complete 20 upper division semester hours in French including the following courses.

FREN 301-3 Advanced French - Composition I
FREN 360-3 Intermediate French Literature
FREN 370-3 Introduction to French Linguistics II

The remaining 11 semester hours will be selected from 400 division French courses (see Undergraduate Courses).

Spanish Requirements
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 220-3 Introduction to Spanish Linguistics
SPAN 240-3 Introduction to Hispanic Literature
Lower division language courses may be challenged. Students must also complete 20 upper division semester hours in Spanish including the following.

*one of*

SPAN 303-3 Spanish Conversation and Composition  
SPAN 304-3 Advanced Spanish Conversation and Composition  
SPAN 349-3 Basic Texts in Hispanic Literature I  
SPAN 350-3 Basic Texts in Hispanic Literature II

The remaining 14 semester hours will be selected from 300 or 400 division Spanish courses (see Undergraduate Courses).

**Spanish Courses**

**Lower Division**  
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 210-3 Spanish Literature in Translation  
SPAN 220-3 Introduction to Spanish Linguistics  
SPAN 240-3 Introduction to Hispanic Literature

**Language**  
SPAN 303-3 Spanish Conversation and Composition  
SPAN 304-3 Advanced Conversation and Composition

**Linguistics**  
SPAN 401-3 Dialectology I: Phonology  
SPAN 402-3 Dialectology II: Lexicon  
SPAN 411-3 Grammatical Analysis of Modern Spanish  
SPAN 413-3 History of the Spanish Language  
SPAN 425-3 Teaching Spanish as a Second Language

**Literature**  
SPAN 349-3 Basic Texts in Hispanic Literature I  
SPAN 350-3 Basic Texts in Hispanic Literature II  
SPAN 352-3 Colonial and 19th Century Latin American Literature  
SPAN 353-3 Approaches to Textual Analysis  
SPAN 440-5 Modern Spanish Novel  
SPAN 441-4 Modern Spanish Theatre  
SPAN 442-5 Modern Spanish Poetry  
SPAN 443-5 Spanish Theatre of the Golden Age  
SPAN 447-4 Cervantes  
SPAN 451-5 Modern Latin American Novel  
SPAN 452-5 Modern Latin American Poetry  
SPAN 453-3 Modern Latin American Short Story  
SPAN 454-3 Latin American Theatre

**Special Topics**  
SPAN 460-3 Selected Topics  
SPAN 461-3 Directed Studies

The selected topics course complements regular Spanish offerings.
Certificate Program in Spanish Language Proficiency

This certificate program is intended for elementary and secondary school teachers and undergraduate students who wish to improve their oral written proficiency in Spanish. [Please note that Spanish is not considered a "teachable subject" for application to the Professional Development Program (secondary).] It is also intended for anyone who wants to enhance their knowledge of the language for cultural reasons, professional needs, or who, for employment purposes, desire official certification of their proficiency in Spanish. This program, however, is not intended for native speakers of Spanish.

Courses are offered on campus during the day and evening, and may be taken on a full or part-time basis. Additionally, a sequential offering of courses is scheduled, subject to sufficient enrollment, at Simon Fraser University at Harbour Centre each Fall, Spring, and Summer semester.

Requirements

Students must successfully complete ten courses, seven of which are specified below. The remaining three may be from any Spanish course except SPAN 210.

The following courses 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
- SPAN 240-3 Introduction to Hispanic Literature (and/or 220-3 Introduction to Spanish Linguistics)
- SPAN 303-3 Spanish Conversation and Composition
- SPAN 304-3 Advanced Spanish Conversation and Composition

The following courses are recommended:
- SPAN 349-3 Basic Texts in Hispanic Literature I
- SPAN 350-3 Basic Texts in Hispanic Literature II
- SPAN 425-3 Teaching Spanish as a Second Language

Notes: It is possible to obtain exemption, up to a maximum of 12 semester hours, from lower division Spanish language courses through Advanced Placement, which may be obtained by demonstrating equivalent preparation. The exempted courses must be replaced with credit obtained by

- approved transfer credit for Spanish courses taken at another post-secondary institution (subject to University regulations governing the approval of transfer credit), up to a maximum of six credit hours
- or
- challenge credit for exempted courses (subject to University regulations governing the approval of challenge credit), up to a maximum of six credit hours
- and/or
- successful completion of other Spanish courses at Simon Fraser University, excluding SPAN 210.

Students who gain or hope to gain exemption as outlined above should consult the program co-ordinator or the departmental assistant early in their program.

Credit gained toward this certificate may be applied toward degree requirements under the normal regulations governing these requirements but cannot be applied toward another Simon Fraser University certificate or diploma.

Latin American Studies Program

The Department of Spanish and Latin American Studies offers the following programs in Latin American Studies.

Undergraduate courses

Course descriptions for all Latin American Studies undergraduate courses.
Major in Latin American Studies
Joint major in Archaeology/Latin American Studies, Business Administration/Latin American Studies, Communication/Latin American Studies, Economics/Latin American Studies, Geography/Latin American Studies, History/Latin American Studies, Political Science/Latin American Studies, Sociology and Anthropology/Latin American Studies, and Spanish/Latin American Studies

Minor in Latin American Studies
Latin American Studies is an interdisciplinary program designed to offer students the maximum opportunity to integrate their understanding of Latin America and its relationship with Canada, the Pacific Rim, and the world.

Major Program
The department offers an interdisciplinary BA major in Latin American Studies which can be taken alone or as a double major degree with any other major. For a Latin American Studies major, students must take the following.

Language Requirements
SPAN 102-3 Introductory Spanish I (or equivalent)
SPAN 103-3 Introductory Spanish II (or equivalent)
SPAN 201-3 Intermediate Spanish (or equivalent)

The department may authorize equivalent knowledge in Portuguese or French to satisfy the language requirement if relevant to the student's approved program.

Course Requirements
Students must complete 12 semester hours in lower division courses with Latin American content including the following courses.

LAS 100-3 Images of Latin America
LAS 140-3 Cultural Heritage of Latin America
LAS 200-3 Introduction to Latin American Issues

Students must complete 32 upper division Latin American semester hours, including at least 21 in LAS 300 and 400 division courses as well as a minimum of three upper division Latin American content courses. The Latin American content courses must be selected from at least two disciplines other than LAS.

Minor Program

Language Requirements
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 ability is a recommended skill for upper division courses, is taught in seminar format and frequently involves independent investigation of a specialized topic.

Course Requirements
Students must complete a total of 12 semester hours of Latin American Studies credit, including the following.

LAS 140-3 Cultural Heritage of Latin America
LAS 200-3 Introduction to Latin American Issues

The remaining six semester hours must be completed in other LAS or Latin American content courses.

Students must complete 15 upper division semester hours of Latin American Studies, including at least nine in LAS 300 and 400 division courses as well as a minimum of two upper division Latin American content courses.
Joint Major Program
The Latin American Studies Program offers an interdisciplinary joint major in Latin American Studies combined with selected disciplines leading to a Bachelor of Arts or a Bachelor of Business Administration. Courses used for credit toward the upper division Latin American Studies requirements may not be used as part of the other discipline's credit requirements, or vice versa. The individual disciplines participating in the joint major program are Archaeology, Business Administration, Communication, Economics, Geography, History, Political Science, Sociology and Anthropology, and Spanish.

Language Requirements
Reading and speaking competence in Spanish or Portuguese equivalent to the successful completion of three college level courses must be demonstrated. (At the discretion of the Undergraduate Curriculum Committee other language training programs or demonstrations of competence may be accepted.)

Latin American Studies Requirements
A minimum of 12 lower division hours is required including the following.

- LAS 140-3 Cultural Heritage of Latin America
- LAS 200-3 Introduction to Latin American Issues

The remaining six semester hours are taken from the approved list of Latin American Content courses (as shown below) in at least two departments.

Note: Students must also satisfy the lower division requirements of the selected joint discipline. (Please consult with appropriate department.)

A minimum of 40 upper division semester hours is required, including at least 20 upper division credits in Latin American Studies, and from 20 to 32 upper division credits in the joint discipline selected, as specified below.

Students must complete 20 upper division semester hours of Latin American Studies credit, including at least 12 in both LAS 300 and 400 division courses as well as a minimum of two upper division Latin American content courses in disciplines outside the joint major.

Other Discipline Requirements
To satisfy the requirements of the other joint major discipline, students must complete 20-32 semester hours, as indicated below for the specific discipline.

Archaeology - 20 semester hours in Archaeology in the 300 and 400 division

Business Administration - Refer to the Business Administration section.

Communication - 24 upper division semester hours in Communication, including CMNS 322, CMNS 362, and CMNS 446. Students must complete the Faculty requirements of either the Faculty of Applied Sciences or of the Faculty of Arts, subject to the degree the student desires: Bachelor of Arts in the Faculty of Applied Sciences or Bachelor of Arts in the Faculty of Arts.

Economics - 25 upper division semester hours including ECON 301, 305-5, and BUEC 333 and at least two 400 level Economics courses.

Geography - 32 semester hours in Geography as specified: 20 semester hours of 300 division courses including GEOG 301 and at least one course from Section A; 12 semester hours of 400 division courses including at least one regional course on Latin America.

History - 30 semester hours in upper division History, as required for History majors.

Political Science - 30 semester hours in upper division Political Science, as required for Political Science majors. (POL 337 and 338 may not be used to satisfy LAS requirements.)
Sociology/Anthropology - 20 semester hours in upper division Sociology or Anthropology.

Spanish - 20 semester hours in upper division Spanish.

**Latin American Studies Courses**
- LAS 100-3 Images of Latin America
- LAS 140-3 Cultural Heritage of Latin America
- LAS 200-3 Introduction to Latin American Issues
- LAS 210-3 Latin American Literature in Translation
- LAS 309-3 Special Topics: Regional Studies I
- LAS 310-3 Special Topics: Regional Studies II
- LAS 311-3 Special Topics: Latin American International Relations
- LAS 312-3 Special Topics: Latin American Cultural Topics
- LAS 318-3 Political Economy of Latin American Development
- LAS 320-3 Canada and Latin America
- LAS 323-3 Women in Latin American Literature and Society
- LAS 402-5 Field Study
- LAS 403-3 Special Topics: Latin American Economy and Society
- LAS 498-5 Independent Study Project

**Courses With Exclusive Latin American Content**

Students are advised to consult the Undergraduate Courses or the department concerned regarding prerequisites and descriptions for the courses listed. Because departments offer courses which are taught by a number of faculty with different professional interests, it should be noted that credit will be given for particular courses only when they are taught by instructors shown above as Associated Faculty.

ARCH 273-3 Archaeology of the New World
ARCH 330-3 Prehistory of Latin America
GEOG 263-3 Selected Regions (when the selected region is Latin American)
GEOG 466-4 Latin American Regional Development
HIST 208-3 Latin America: The Colonial Period
HIST 209-3 Latin America: The National Period
HIST 458-3 Problems in the Political and Social History of Latin America
HIST 459-3 Problems in the Political and Social History of Latin America
POL 337-3 Government and Politics: Selected Latin American Nations I
POL 338-3 Government and Politics: Selected Latin American Nations II
SA 263-4 Peasants, Proletarians and the Global Economy (when the selected region is Latin American)
SA 363-4 Processes of Development and Underdevelopment
SA 392-4 Latin America
SPAN 352-3 Colonial and 19th Century Latin American Literature
SPAN 451-5 Modern Latin American Novel
SPAN 452-5 Modern Latin American Poetry
SPAN 453-3 Modern Latin American Short Story
SPAN 454-3 Latin American Theatre

**Courses with Partial Latin American Content**

Courses with partial Latin American content, or in which Latin America may be emphasized in a given semester, may be used to fulfill program requirements when their content is appropriately focused on the Latin American region. In questionable situations, consult course outlines in the department's general office and confer with the advisor of the Latin American Studies Program for specific authorization. Students wishing to take a special topics course for credit toward a joint major or minor in Latin American Studies should have the course approved by the Co-ordinator.

ARCH 474-3 Regional Studies in Archaeology: North America - Southwest
CMNS 240-3 The Political Economy of Communication
CMNS 322-4 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
ECON362-4 Economics of Natural Resources
GEOG 422-4 Geography of the Third World
HIST 104-3 History of the Americas to 1763
HIST 299-3 Problems in History
HIST 324-3 Slavery in the Americas
HIST 485-3 Studies in History I (Special Topics)
HIST 486-3 Studies in History II (Special Topics)
POL 342-3 Relations Between Developed and Developing Nations
POL 345-3 The Nation-State and the Multinational Corporation
POL 433-3 Comparative Developing Systems
SPAN 240-3 Introduction to Hispanic Literature
SPAN 460-3 Selected Topics

Field School

The LAS Field School is unique in Canada, providing students with the opportunity to complete a full semester in Latin America, and at the same time, to gain through direct experience a deeper insight into the culture, politics, and economy of this increasingly important region. A group of three faculty and up to 30 students travel every second year to a selected location.

Spanish Undergraduate Courses

Faculty of Arts

SPAN 102-3 Introductory Spanish I
Acquisition of spoken fluency and elementary reading facility. This course is for all students who have not previously taken Spanish and for those whose proficiency in Spanish is not judged adequate for more advanced courses. (Tutorial/Laboratory)

SPAN 103-3 Introductory Spanish II
Continuation of the work of SPAN 102; it should be taken, wherever possible, in the semester immediately following SPAN 102. (Tutorial/Laboratory) Prerequisite: SPAN 102 or equivalent.

SPAN 201-3 Intermediate Spanish I
Emphasis on oral command, and accurate and idiomatic expression. (Lecture/Tutorial) 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. (Lecture/Tutorial) Prerequisite: SPAN 201.

SPAN 220-3 Introduction to Spanish Linguistics
An introduction to the study of Spanish linguistics, with particular attention to the sound system, grammatical structure, and lexical contrasts with English. (Lecture/Tutorial) Prerequisite: SPAN 202.

SPAN 240-3 Introduction to Hispanic Literature
An introduction to Spanish and Latin American thought through selected readings of modern authors; with emphasis on reading facility and appreciation of literature. (Lecture/Tutorial) Prerequisite: SPAN 202.

SPAN 300-3 Spanish Literature in Translation
A study in English of significant contributions to 20th century Spanish literature. (Lecture/Tutorial)

SPAN 303-3 Spanish Conversation and Composition
Conversation and composition on selected topics with emphasis on correct spelling, sentence and paragraph structures. (Lecture/Tutorial) Prerequisite: SPAN 202 or equivalent.
SPAN 304-3 Advanced Spanish Conversation and Composition
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. (Lecture/Tutorial) Prerequisite: SPAN 303 or equivalent.

SPAN 307-3 Practical Spanish Phonetics
A video assisted course designed to improve oral skills and to provide detailed information about phonetic analysis and the sound system of Spanish. (Lecture/Laboratory) Prerequisites: SPAN 220 or equivalent; SPAN 303 recommended.

SPAN 349-3 Basic Texts in Hispanic Literature I
A study of selected works from the sixteenth to the nineteenth centuries. (Lecture/Tutorial) Prerequisites: SPAN 240. SPAN 349 is required for Spanish majors and honors. Students with credit in SPAN 241 may not take this course for further credit.

SPAN 350-3 Basic Texts in Hispanic Literature II
A survey of important works from the Middle Ages to the Renaissance. (Lecture/Tutorial) Prerequisite: SPAN 240.

SPAN 352-3 Texts of the Colonial Period
A study of selected works in Latin American literature from the times of the "Discovery" to the 19th century. Prerequisite: SPAN 240.

SPAN 353-3 Approaches to Textual Analysis
Methodological introduction to textual analyses, and study of theoretical basis. Application to film, mass media, and literary texts. (Lecture/Tutorial) Prerequisite: SPAN 220.

SPAN 401-3 Dialectology I: Phonology
Analysis of the phonological systems of selected regional varieties of Spanish. (Lecture/Tutorial) Prerequisite: SPAN 220.

SPAN 402-3 Dialectology II: Lexicon
A study of major regional varieties of Spanish vocabulary and the influence of other languages on Spanish: neologisms, borrowings, loan-translations, etc. (Lecture/Tutorial) Prerequisite: SPAN 220. Recommended: SPAN 401.

SPAN 411-3 Grammatical Analysis of Modern Spanish
The scientific description of modern Spanish morphology and syntax. (Lecture/Tutorial) Prerequisite: SPAN 220.

SPAN 413-4 History of the Spanish Language
Description of the historical phonology and grammar of Spanish. (Lecture/Tutorial) Prerequisite: SPAN 220.

SPAN 425-4 Teaching Spanish as a Second Language
Application of linguistic principles to the teaching of Spanish as a second/additional language. (Lecture/Tutorial) Prerequisite: SPAN 220.

SPAN 445-5 Selected Topics in Modern Spanish Literature
Studies in either the modern Spanish novel, modern Spanish theatre, or modern Spanish poetry. Students will receive advance notice about which topic will be taught in a given term. The modern Spanish novel will cover the period from the end of nineteenth century to the present. Modern Spanish theatre will include an introduction to dramatic theory and a critical study of representative works. Modern Spanish poetry will include an introduction to poetic theory and a critical study of modern Spanish poets from the turn of the century to the present. (Seminar) Prerequisite: SPAN 240

SPAN 448-5 Selected Topics in the Golden Age
Studies in either the Spanish theatre of the Golden Age, or the works of Miguel de Cervantes Saavedra. Students will receive advance notice about which topic will be taught in a given term. The Spanish theatre of the Golden Age will introduce students to seventeenth century Spanish thought through the critical study of major plays. The studies on Miguel de Cervantes will be conducted either by focusing on his theatre, poetry and fiction, or by concentrating exclusively on his fiction in the context of the narrative of the period. (Seminar) Prerequisite: SPAN 240.
SPAN 456-5 Selected Topics in Modern Latin American Narrative
Studies in either modern Latin American novel, or modern Latin American short story. Students will receive advance notice about which topic will be taught in a given term. Modern Latin American novel will study the major Latin American novelists and narrative genres of the twentieth century with special emphasis on current techniques of literary analysis. Modern Latin American short story will study the genre in the twentieth century through its most representative authors.
(Seminar) Prerequisite: SPAN 240.

SPAN 457-5 Selected Topics in Modern Latin American Poetry and Theatre
Studies on either modern Latin American poetry or modern Latin American theatre. Students will receive advance notice about which topic will be taught in a given term. (Seminar) Prerequisites: SPAN 240.

SPAN 460-3 Special Topics SPAN 461-3 Directed Studies
Prerequisite: 90 credit hours, including SPAN 220 or 240, and permission of the department.

SPAN 465-6 Honors Essay
An honors essay on a topic to be agreed upon by the student and a member of faculty. A copy will be permanently filed with the department. On completion, the essay is to be defended orally in a departmental seminar. (Independent Study) Prerequisite: permission of the supervisor.

Department of Women's Studies
Location: 6203 Academic Quadrangle
Telephone: 778.782.3333
Chair: M.L. Stewart BA (Calg), MA, PhD (Col)

Professors
M.G. Cohen BA (Iowa Wesleyan), MA (NY), PhD (York)*
M.L. Stewart BA (Calg), MA, PhD (Col), Chair of Department**

Associate Professors
M.M. Kimball BA (Macalester), PhD (Mich)***
J. Levitin BA, MA (Wash), PhD (NY State)****
S. Wendell BA (NY State), PhD (Br Col)

Assistant Professor
M. MacDonald BEd (Qu), BSc (Mt All), PhD (W Ont)

* joint appointment with Political Science
** joint appointment with History
*** joint appointment with Psychology
**** joint appointment with Contemporary Arts

Undergraduate courses
Course descriptions for all Women's Studies undergraduate courses.

Major Program

Lower Division Requirements
Students must complete 12 lower division hours in Women's Studies, including both of

* WS 101-3 Introduction to Women's Issues in Canada
* WS 102-3 Introduction to Western Feminisms
Upper Division Requirements

Students must complete 30 upper division hours in Women's Studies including

WS 400-5 Issues in Feminist Methodologies.

Students may substitute up to eight semester hours of upper division credit offered by other departments and approved by Women's Studies.

Students will be required to take at least one course in each of the three following groups of courses.

Science and Technology
WS 204-3 Women, Science and Technology
WS 206-3 Issues in Women's Health and Health Care
WS 313-3 Women and the Environment

Social Sciences
WS 200-3 Women in Cross-Cultural Perspective
WS 201-3 Women in Canada 1600-1920
WS 202-3 Women in Canada 1920 to the Present
WS 203-3 Female Roles in Contemporary Society
WS 307-3 Women in British Columbia
WS 311-5 Feminist Psychoanalytic Theories

Humanities and Fine Arts
WS 205-3 Women and Popular Culture
WS 304-3 Women and Religion
WS 305-3 Women and Utopias
WS 306-3 Women's Autobiographies, Memoirs and Journals
WS 312-5 Women and Film

Joint Major in English and Women's Studies

The joint major in English and Women's Studies is an inter-departmental program designed for students who are interested in exploring the various relationships between the study of English literature and Women's Studies.

Interested students must plan their program in consultation with the program faculty advisors and should consult the Guidelines for Course Selection available from each department.

Advisors
Ms. H. Newcombe, 778.782.3371, Department of English
Ms. B. Korstrom, 778.782.3593, Department of Women's Studies

Students are encouraged to consult advisors from both departments.

Lower Division Requirements

English
three of
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 199-3 University Writing

Any one but not more than one of ENGL 101, 102, 103, 104, and 199 may be replaced by any one of ENGL 210, 212, 214, 221, 222 or 228; or by any three unassigned transfer credits in English. However, ENGL 199 and 210 cannot both be used to fulfill the requirements for the joint major.

_all of_
ENGL 204-3 Literature of the Anglo-Saxon Period, Middle Ages and Renaissance
ENGL 205-3 Literature of the Late Renaissance and Enlightenment
ENGL 206-3 Literature of the Romantic and Victorian Periods
(18 semester hours)

Women's Studies
* WS 101-3 Introduction to Women's Issues in Canada
* WS 102-3 Introduction to Western Feminisms

*completion of these courses will be waived for students who, prior to the 1994 Fall semester, completed WS 100 or its equivalent in transfer credits.

_any three of_
WS 200-3 Women in Cross-Cultural Perspective
WS 201-3 Women in Canada, 1600-1920
WS 202-3 Women in Canada, 1920 to the Present
WS 203-3 Female Roles in Contemporary Society
WS 204-3 Women, Science and Technology
WS 205-3 Women and Popular Culture
WS 206-3 Issues in Women's Health and Health Care
(15 semester hours)

Total 33 semester hours

Upper Division Requirements

English
Students are encouraged to select courses which focus on women writers and/or offer an explicit feminist perspective. Students must complete 20 semester hours in upper division English courses, including the following.

_one of_
ENGL 300-4 Old English I: Introductory Old English
ENGL 301-4 Old English II: Advanced Old English
ENGL 304-4 Topics in Medieval Literature
ENGL 306-4 Chaucer
ENGL 308-4 Tudor Poetry and Prose

_and one of_
ENGL 310-4 Elizabethan and Jacobean Drama
ENGL 312-4 Shakespeare
ENGL 314-4 Seventeenth Century Prose and Verse
ENGL 316-4 Milton
ENGL 318-4 Major Authors of the Restoration and Eighteenth Century: Dryden, Swift, Pope, Johnson, Blake
ENGL 320-4 Topics in Literature and Culture in the Restoration and Eighteenth Century
ENGL 322-4 Eighteenth Century Novelists

The following are recommended if the student is interested in critical theory.
ENGL 364-4 History and Principles of Literary Criticism
ENGL 366-4 Studies in Critical Approaches to Literature

Women's Studies
Students must complete 20 semester hours in upper division Women's Studies courses, including the following course.

WS 400-5 Methodological Issues in Women's Studies

and two of
WS 304-3 Women and Religion
WS 305-3 Women and Utopias
WS 306-3 Women's Autobiographies, Memoirs and Journals
WS 311-3 Feminist Psychoanalytic Theories
WS 313-3 Women and the Environment

The remaining hours are chosen from 300 and 400 division Women's Studies courses. Exceptionally, and only with department permission, a maximum of three semester hours of designated Women's Studies credit for a course offered by another department may be substituted for three of these remaining semester hours.

Total 40 semester hours

The remaining required upper division hours are at the student's discretion.

Joint Major in Psychology and Women's Studies

Advisors
C. Medford 778.782.3359, B. Davino 778.782.4840 - Department of Psychology
B. Korstrom 778.782.3593 - Department of Women's Studies

Students are encouraged to consult advisors from both departments.

The joint major in Psychology and Women's Studies is an interdepartmental program designed for students who are interested in exploring various relationships between the study of Psychology and Women's Studies.

Joint major students (or prospective students) must plan their program in consultation with the program faculty advisors and should consult the Guidelines for Course Selection available from each department.

Lower Division Requirements

Psychology
all of
PSYC 100-3 Introduction to Psychology I
PSYC 102-3 Introduction to Psychology II
PSYC 201-3 Research Methods in Psychology
PSYC 210-3 Data Analysis in Psychology

plus two of
PSYC 221-3 Introduction to Cognitive Psychology
PSYC 241-3 Introduction to Abnormal Psychology
PSYC 250-3 Child Psychology
PSYC 260-3 Social Psychology
PSYC 270-3 Introduction to Personality
PSYC 280-3 Biological Bases of Behavior
(18 credit hours)
Women's Studies

* all of
  * WS 101-3 Introduction to Women's Issues in Canada
  * WS 102-3 Introduction to Western Feminisms
  WS 203-3 Female Roles in Contemporary Society

*completion of these courses will be waived for students who, prior to the 1994 Fall semester, completed WS 100 or its equivalent in transfer credits.

plus any two of
  WS 200-3 Women in Cross-Cultural Perspective
  WS 201-3 Women in Canada, 1600-1920
  WS 202-3 Women in Canada, 1920 to the Present
  WS 204-3 Women, Science and Technology
  WS 205-3 Women and Popular Culture
  WS 206-3 Issues in Women's Health and Health Care

(15 credit hours)

Total 33 credit hours

Upper Division Requirements

Psychology
Twenty Psychology upper division credit hours are required, including PSYC 307 or 308. No more than five of these credits may be in directed studies. Students should select courses within their particular area(s) of study which include information on sex/gender differences and psychology of women.

Women's Studies
Twenty credit hours in upper division Women's Studies courses are required including WS 311 and 400.

The remaining 10 credit hours will be chosen from 300 and 400 division Women's Studies courses. Exceptionally, and only with the permission of the department, a maximum of three credit hours of designated Women's Studies credit for a course offered by another department may be substituted for three of these remaining credit hours.

Total 40 credit hours

Minor Program
A minor program in Women's Studies may be taken in conjunction with any major or honors Bachelors degree, or with a Bachelor of General Studies. The program is designed to offer students the maximum opportunity to integrate their understanding of the role of women in their society and culture.

The nucleus of the department consists of the faculty at the University with full, joint or semester appointments in Women's Studies.

For further information, contact the department prior to normal registration.

Lower Division Requirements
Nine semester hours credit including WS 101 and 102. Completion of WS 101 and 102 will be waived for students who, prior to the 1994 Fall semester, completed WS 100 or its equivalent.

plus any one of
  WS 200-3 Women in Cross-Cultural Perspective
  WS 201-3 Women in Canada 1600-1920
  WS 202-3 Women in Canada 1920 to the Present
  WS 203-3 Female Roles in Contemporary Society
WS 204-3 Women, Science and Technology
WS 205-3 Women and Popular Culture
WS 206-3 Issues in Women's Health and Health Care

Unassigned Women's Studies transfer credit at the 200 division may be substituted for the above 200 division course. All students in the minor program must complete WS 101 and 102 or approved equivalents.

Note: completion of WS 101 and 102 will be waived for students who, prior to the 1994 Fall semester, completed WS 100 or its equivalent in transfer credits.

Upper Division Requirements
Students must complete fifteen semester hours, including WS 400. Those pursuing a minor normally must fulfill 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 designated credit toward the Women's Studies minor upon application by the student to the department. Only five semester hours of designated courses will count toward the minor.

Candidates for an honors or a major in History may count either or both of WS 201 and 202 toward the 18 lower division History credits 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. For further information, refer to the Faculty of Arts Extended Minor Program section.

Certificate Program
This program provides a combination of academic training in Women's Studies and practical training in community work on behalf of women. It is open to all students who meet normal university requirements for admission.

Lower Division Requirements
Eighteen semester hours credit including WS 101 and/or 102 are required. Completion of WS 101 or 102 will be waived for students who, prior to the 1994 Fall semester, completed WS 100 or its equivalent in transfer credits.

Students must also complete five of the following courses.

WS 200-3 Women in Cross Cultural Perspectives
WS 201-3 Women in Canada 1600-1920
WS 202-3 Women in Canada 1920 to Present
WS 203-3 Female Roles in Contemporary Society
WS 204-3 Women, Science and Technology
WS 205-3 Women and Popular Culture
WS 206-3 Issues in Women's Health and Health Care

Upper Division Requirements
Twelve credit hours from any 300 or 400 division Women's Studies courses must be completed. One course in another department or program may fulfill this requirement, if the course is designated for Women's Studies credit.

Practicum
The practicum consists of satisfactory completion of supervised training and work in a community group which promotes the well-being of women. (No grade for the practicum will be given.) The terms of the practicum will be arranged among the Women's Studies Curriculum Committee, the community group and the student. Students are expected to work at the practicum two and a half days a week for 13 weeks. At the end of the period, the Women's Studies Curriculum Committee, in consultation with the community group and student, will evaluate the student's performance. Those who have past experience in an appropriate community group, and/or who are working in an appropriate community group while enrolled in this program, may
apply to the department to count that work toward partial or full completion of the practicum. The purpose of the practicum is to
gain skills and experience in a) applying the knowledge acquired in academic Women's Studies courses to community work
and/or b) applying community work experiences to academic work.

Co-operative Education

Women's Studies students may participate in co-operative education through the Co-operative Education Program in Liberal Arts.

Womens Studies Undergraduate Courses

Faculty of Arts

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. (Lecture/Tutorial) Students
who have taken WS 100 may not take WS 101 for further credit.

WS 102-3 Introduction to Western Feminisms
An historical and comparative survey of feminisms in the twentieth century in Western Europe and North America.
(Lecture/Tutorial) Students who have taken WS 100 may not take WS 102 for further credit.

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. (Lecture/Tutorial) Prerequisite: WS 101 or 102 (may be taken concurrently) or WS 100.

WS 201-3 Women in Canada 1600-1920
Examines the changing nature of female experience from the days of New France to the First World War through the lives of
both famous and anonymous women. The diaries, memoirs, letters and literary works of Canadian women will be a major
interest. (Lecture/Tutorial) Prerequisite: WS 101 or 102 (may be taken concurrently) or WS 100.

WS 202-3 Women in Canada 1920 to the Present
Examines the range of experience open to Canadian women in the twentieth century. The strengths and limitations of women's
roles will be analysed from a historical perspective, using demographic evidence, autobiographies, literature, government
documents and monographs. (Lecture/Tutorial) Prerequisites: WS 101 or 102 (may be taken concurrently) or WS 100.

WS 203-3 Female Roles in Contemporary Society
An interdisciplinary study of definitions of self/other as derived from sexual roles and the psychological mechanisms by which
such definitions are acquired and maintained. (Lecture/Tutorial) Prerequisites: WS 101 or 102 (may be taken concurrently) or
WS 100.

WS 204-3 Women, Science and Technology
Examines some of the important factors that influence the participation of women in science and technology, including
particularly the relation between women and math, and explores, through practical projects, some of the conditions for women's
success in scientific or technical work. (Lecture/Tutorial/Laboratory) Prerequisites: WS 101 or 102 (may be taken concurrently)
or WS 100.

WS 205-3 Women and Popular Culture
A study of images of women as revealed through the analysis of a variety of media. (Lecture/Tutorial) Prerequisites: WS 101 or
102 (may be taken concurrently) or WS 100.

WS 206-3 Issues in Women's Health and Health Care
A critical examination of women's relation to the health care system in Canada as practitioners, users, researchers and objects of
medical treatment and research. Among the topics discussed will be the medical model, the privatization of health care, the
medicalization of daily life including reproduction, and feminist alternatives to the medical system. (Lecture/Tutorial)
Prerequisites: one of WS 101 or 102 (may be taken concurrently) or 100. Students who have taken WS 001 may not take WS 206 for further credit.

WS 300-5 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. (Seminar) Prerequisites: nine credits in Women's Studies including WS 101 and/or 102 or 100.

WS 301-3 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. (Lecture/Tutorial) Prerequisite: six credits in Women's Studies including WS 101 and/or 102 or 100.

WS 302-3 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. (Lecture/Tutorial) Prerequisite: six credits in Women's Studies including WS 101 and/or 102 or 100.

WS 303-3 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. (Lecture/Tutorial) Prerequisite: six credits in Women's Studies including WS 101 and/or 102 or 100.

WS 304-3 Women and Religion
This course examines critical issues of women's relationships to theology and religious practice in major religious traditions. (Lecture/Tutorial) Prerequisite: six credits in Women's Studies including WS 101 and/or 102 or 100.

WS 305-3 Women and Utopias
This course focuses upon various visions of a better world for women. Using historical and fictional sources, it examines proposals to reorganize societies, giving special attention to utopian ideas about creating equality among all members of the community. (Lecture/Tutorial) Prerequisite: six credits in Women's Studies including WS 101 and/or 102 or 100.

WS 306-3 Women's Autobiographies, Memoirs and Journals
An examination of women's autobiographical writings, focusing on self-images, self-presentations and world views. (Lecture/Tutorial) Prerequisite: six credits in Women's Studies including WS 101 and/or 102 or 100.

WS 307-3 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. (Lecture/Tutorial) Prerequisite: six credits in Women's Studies including WS 101 and/or 102 or 100.

WS 310-3 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. (Lecture/Tutorial) Prerequisite: six credits in Women's Studies including WS 101 and/or 102 or 100.

WS 311-5 Feminist Psychoanalytic Theories
This course examines both the psychoanalytic tradition and modern feminist frameworks for psychoanalytic theory and practice. (Seminar) Prerequisite: nine credits in Women's Studies including WS 101 and/or 102 or 100.

WS 312-5 Women and Film
An examination of film theory and practice from a feminist perspective. (Seminar) Prerequisite: nine credits in Women's Studies including WS 101 and/or 102 or 100.
WS 313-3 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. (Lecture/Tutorial) Prerequisites: six credits of Women's Studies including WS 101 and/or WS 102 or 100. Students who have taken this course as a Women's Studies Special Topics course may not register for WS 313.

WS 400-5 Methodological Issues in Women's Studies
A study and critique of the assumptions of existing disciplines as they refer to the study of women. This course is designed as corrective and supplemental to the various disciplines as they are currently taught. (Lecture/Seminar) Prerequisites: nine credits in Women's Studies including WS 101 and 102 or 100.

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. (Individual Research) Prerequisite: nine credits in Women's Studies including WS 101 and/or 102 or 100; permission of instructor; approval of course proposal by department.

WS 402-2 Directed Readings
Provides opportunities for individual tuition at an advanced level. (Individual Tuition) Prerequisites: nine credits in Women's Studies including WS 101 and/or 102 or 100; permission of instructor; approval of course proposal by department.

WS 403-3 Directed Readings
Provides opportunities for individual tuition at an advanced level. (Individual Tuition) Prerequisites: nine credits in Women's Studies including WS 101 and/or 102 or 100; permission of instructor; approval of course proposal by department.

Business Administration Undergraduate Courses

Faculty of Business Administration
See also courses listed under Business Administration and Economics (BUEC).

All upper division BUS courses have a prerequisite of 60 credit hours. However, approved Business Administration majors or minors may take 300 division BUS courses upon completion of 45 credit hours.

In order for a course to be accepted as fulfilling a prerequisite, 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).

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. (Lecture/Tutorial) Prerequisites: ECON 103, 105; MATH 157; 15 credit hours. Students with credit for ECON 301 or BUS 307 may not take BUS 207 for further credit.

BUS 225-0 Co-op Practicum I
This is the first semester of work experience for students in the Co-op 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 semester prior to registration for this course.

BUS 237-3 Introduction to Computers and Information Systems in Business
An introduction to computer based information systems and to their applications in business, including a discussion of issues involved in the use of information systems by management. The course also provides hands on tutorial experience in the use of computers, with particular emphasis on business applications of micro computers. (Lecture/Tutorial) Prerequisite: 15 credit hours. Students may not receive credit for both BUS 237 and 337.
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. (Lecture/Tutorial) Prerequisite: 15 credit hours.

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. (Lecture/Tutorial) Prerequisite: BUS 251; 15 credit hours. Students with credit for BUS 324 or 328 may not take BUS 254 for further credit.

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. (Lecture/Tutorial) Prerequisites: 15 credit hours; one of ENGL 101, 102, 103, 104, 199, PHIL 001, 100, 120.

BUS 303-3 Business in Society
This course examines the changing role of business in Canadian society. Emphasis is placed on the historical, social and political developments which have shaped and continue to shape the Canadian business community. (Lecture/Tutorial) Prerequisite: 60 credit hours.

BUS 304-3 Introduction to Business Ethics
This seminar fosters the examination of perspectives in moral reasoning within the decision-making process of business men and women. Three salient levels in the analysis of ethical dilemmas will be discussed and integrated. These are the personal, organizational and systemic. Topics to be discussed will be drawn from the following: meaning of work, good conscience, product liability, advertising and fair-world depictions, whistle blowing and loyalty, corporate bribery, pay equity, health and safety. (Seminar) Prerequisite: 60 credit hours.

BUS 312-4 Business 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. (Lecture/Tutorial) Prerequisites: BUS 254 or 324 or 328; 60 credit hours.

BUS 315-4 Investments
Introduction to personal and institutional investment and portfolio management, approaches to security analysis, efficient markets, portfolio theory, capital asset pricing model, option pricing. (Lecture/Tutorial) Prerequisites: BUS 312, BUEC 333; 60 credit hours.

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. (Lecture/Tutorial) Prerequisites: BUS 254 (or 324 or 328), 237 and 60 credit hours. Students with credit for BUS 252 may not take BUS 319 for further credit.

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. (Lecture/Tutorial) Prerequisites: BUS 319; 60 credit hours.

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. (Lecture/Tutorial) Prerequisites: BUS 320-3; 60 credit hours.
BUS 325-0 Co-op Practicum II
This is the second semester of work experience for students in the Co-op 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 semester prior to registration for this course.

BUS 326-0 Co-op Practicum III
This is the third semester of work experience for students in the Co-op 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 semester prior to registration for this course.

BUS 327-0 Co-op Practicum IV
This is the fourth semester of work experience for students in the Co-op 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 semester prior to registration for this course.

BUS 329-3 Income Taxation 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. (Lecture) Prerequisites: 60 credit hours. Corequisite: BUS 321 or permission of Faculty.

BUS 336-4 Management Science
The application of Management Science techniques to the analysis of marketing, finance, production, or organizational and administrative problems. (Lecture/Tutorial) Prerequisites: 60 credit hours. Co-requisite: BUEC 333.

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. (Lecture/Tutorial) Prerequisite: 60 credit hours.

BUS 344-3 Industrial 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. (Lecture/Tutorial) Prerequisites: BUS 343; 60 credit hours.

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. (Lecture/Tutorial) Prerequisites: BUS 312; 60 credit hours.

BUS 347-3 Buyer 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. (Lecture/Tutorial) Prerequisites: BUEC 232 (or STAT 270), BUS 343; 60 credit hours.

BUS 360-3 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. (Lecture) Prerequisites: 60 credit hours.

BUS 362-4 Information Analysis and Systems Design
The course focuses on the various issues involved in investigating, analyzing and designing systems, and the strategies used to manage the process. In addition, students will make use of Computer-Aided Software Engineering (CASE) tools in laboratory,
performing their systems analysis and design. (Seminar/Laboratory) Prerequisites: BUS 237; 60 credit hours. CMPT101 is recommended.

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. (Lecture) Prerequisites: BUS 272 or 372 or 374, and 343, or permission of the Faculty; 60 credit hours.

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. (Lecture/Tutorial) Prerequisite: 60 credit hours; BUS 272 (or 372).

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. (Lecture/Tutorial) Prerequisites: BUS 272 (or 372); 60 credit hours.

BUS 388-3 Teamwork in Organizations
Nature, design and processes of effective teamwork in organizations. The course utilizes lectures, discussions, role plays, simulations and team projects. It attempts to provide both an intellectual appreciation of the issues involved in teams and team-based organizations and a practical set of skills for team membership and leadership. (Lecture) Prerequisites: BUS 272 (or 372); 60 credit hours.

BUS 393-3 Commercial Law
Common law, equity, and statute law; contracts, agency, and negotiable instruments; partnership and corporation law; international commercial law. (Lecture/Tutorial) Prerequisite: 60 credit hours. 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 semester to semester depending upon the interest of Faculty and students. (Lecture/Tutorial) Prerequisites: permission of the Faculty; 60 credit hours.

BUS 395-3 Selected Topics in Business Administration
The subject matter will vary from semester to semester depending upon the interest of faculty and students. (Lecture/Tutorial) Prerequisites: permission of the Faculty; 60 credit hours.

BUS 398-3 Commercial Legal Transactions
An examination of the legal environment within which businesses must function with a concentration on the legal transactions involved in commercial activities. This course will examine in considerable detail commercial transactions such as sale of goods, negotiable instruments, and various forms of secured transactions expanding on what was first introduced in BUS 393. Prerequisites: BUS 393; 60 credit hours.

BUS 403-3 Seminar in Business and Society
Advanced topics in business and society. Specific emphasis may vary and may include the evolution of the business system in Canada, foreign investment and its impact, consumerism, environmental protection, business ideologies, etc. (Seminar) Prerequisite: 90 credit hours.

BUS 410-3 Financial Institutions
An examination of debt, equity, and derivative securities markets. Institutional structure, financial contract forms, and pricing relationships will be stressed. Topics to be covered include financial intermediation, financial transacting, valuation, and hedging
strategies based on derivative securities. (Seminar) Prerequisites: BUS 315 and ECON 210 (or ECON 310); 60 credit hours. Corequisite: BUS 360.

BUS 413-4 Financial Management
Firm financial management and policy; introduction to the pricing of risky securities, portfolio theory, the capital asset pricing model and option theory; capital budgeting under uncertainty; capital structure; dividend policy. (Lecture/Tutorial) Prerequisites: BUS 315, BUEC 333; 60 credit hours. Corequisite: BUS 360.

BUS 416-3 Investment Analysis and Design
Analysis and design of investment contracts in a portfolio setting. Standard investment media and markets (stocks and bonds) will be addressed, as will derivative securities such as options and future contracts. (Seminar) Prerequisites: BUS 315-4; 60 credit hours. Corequisite: BUS 360.

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. (Seminar) Prerequisites: BUS 315 and ECON 345; 60 credit hours. Corequisite: BUS 360.

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. (Seminar) Prerequisites: BUS 321; 60 credit hours. Corequisite: BUS 360.

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. (Seminar) Prerequisites: BUS 321; 60 credit hours. Corequisite: BUS 360.

BUS 422-3 Seminar in Accounting
Advanced and special topics in accounting. The specific topics will vary depending on faculty interests. The general content will tend toward specialized topics not dealt with on a recurring basis in the regular course sequence. (Seminar) Prerequisite: 90 credit hours. Corequisite: BUS 360.

BUS 424-3 Managerial Accounting II
Process costing; joint and by-product costing; inventory planning and control; cost accounting and statistical methods, relationship to operations research. (Seminar) Prerequisites: BUS 319, BUEC 333, 75 credit hours. Corequisite: BUS 360.

BUS 425-0 Co-op Practicum V
This is the fifth semester of work experience for students in the Accounting Co-op 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 semester prior to registration for this course.

BUS 426-3 Auditing 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. (Seminar) Prerequisites: BUS 321 and 60 credit hours. Corequisite: BUS 360.

BUS 427-3 Seminar in International Accounting
Identification and analysis of the conceptual, managerial, professional, institutional and political issues of international accounting. (Seminar) Prerequisites: BUS 321 and 60 credit hours. Corequisite: BUS 360.

BUS 430-3 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. (Seminar) Prerequisite: 60 credit hours. Corequisite: BUS 346, 360. Recommended: BUS 374

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. (Seminar) Prerequisite: 60 credit hours. Corequisites: BUS 346, 360 and either 430 or 432.

BUS 432-3 International Human Resources 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. (Seminar) Prerequisites: 60 credit hours. Corequisites: BUS 346, 360 and either 430 or 432.

BUS 434-3 Foreign Market Entry
Product-market entry decisions. Choices among foreign market entry modes (exports, licensing, direct investment, etc.) Cooperative alliances in international business. (Seminar) Prerequisites: 60 credit hours. Corequisites: BUS 346, 360 and either 430 or 432.

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. (Seminar) Prerequisites: 60 credit hours. Corequisites: BUS 346, 36 and either 430 or 432.

BUS 437-3 Decision Analysis in Business
A seminar in the use of Bayesian techniques in business decisions. (Seminar) Prerequisites: BUEC 333; 60 credit hours. Corequisite: BUS 360.

BUS 438-3 Multinational Corporate Finance
An introduction to the management of the multinational firm from a financial perspective. Topics to be covered include currency risk management and international capital budgeting. (Seminar) Prerequisites: 60 credit hours. Corequisites: BUS 346 and either 430 or 432. Corequisite: BUS 360.

BUS 439-3 North American International Trade Issues
Examines contemporary international trade in a historical and policy context from the perspective of North American business. Concentrates on the development of trade policy in Canada, the United States and Mexico. Studies the North American Free Trade Area, GATT and other international trade organizations and issues. (Seminar) Prerequisites: 60 credit hours. Corequisite: BUS 346 and either 430 or 432. Corequisite: BUS 360.

BUS 442-3 Introduction to Marketing Research
A course in the management of marketing research. The basics of the design, conduct, and analysis of marketing research studies. (Lecture/Tutorial) Prerequisites: BUS 343, BUEC 333; 60 credit hours. Corequisite: BUS 360.

BUS 445-3 Analysis of Data for Management
The analysis and interpretation of data, particularly multivariate data. This course is complementary to BUS 442 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. (Lecture/Tutorial) Prerequisites: BUS 343, BUEC 333, 60 credit hours. Corequisite: BUS 360.

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. (Seminar) Prerequisites: BUS 312, BUS 347; 60 credit hours. Corequisite: BUS 360.
BUS 447-3 International 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. (Seminar) Prerequisites: BUS 343, 60 credit hours. Corequisite: BUS 346 and either 430 or 432. Corequisite: BUS 360.

BUS 448-4 Promotion Management
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. (Lecture/Tutorial) Prerequisites: BUEC 232 (or STAT 270) and BUS 347; 60 credit hours. Corequisite: BUS 360.

BUS 449-3 Marketing and Society
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. (Lecture/Seminar) Prerequisites: BUS 343; 60 credit hours. Corequisite: BUS 360.

BUS 450-3 Theoretical Issues in Strategic Management
An investigation of the theoretical basis of strategic management, particularly in the areas of strategic decision making, strategy formulation and implementation. (Seminar) Prerequisite: BUS 478. Corequisite: BUS 360.

BUS 452-3 Seminar in Advanced Strategic Analysis
The seminar presents advanced techniques for in-depth analysis of industries and competitors, and for formulating a competitive strategy. It builds on the concepts of Business Policy developed in BUS 478. The course draws on contemporary research in business strategy and industrial economics. (Seminar) Prerequisites: BUS 478 or permission of the Faculty; 60 credit hours. Corequisite: BUS 360.

BUS 462-4 Management Support Systems
This course is designed to familiarize the student with theories, tools and techniques for management support systems. The course will cover topics from Decision Support Systems (DSS), Executive Support Systems (ESS) and Expert Systems. It will cover a variety of DSS, ESS and ES tools ranging from spreadsheets to fourth generation languages accessing corporate databases, to expert system shells and executive support system builders. (Lecture/Laboratory) Prerequisites: BUS 336, 362 and 364. Corequisite: BUS 360.

BUS 466-3 Managing Data Communications
The students will be exposed to business issues in the planning, implementation and management of data communications in organizations. They will study the changes taking place in industry as a result of new data communications technology. Also, they will become familiar with the various technical levels of communications systems, and the various standards and configurations that are currently being used. The Novel NetWare LAN system will be used as an example of a communications system, to demonstrate issues and operations required of a communications network manager. (Seminar) Prerequisites: BUS 362 and 364 or declared CMPT major with BUS 237 or CMPT 275 and permission of the Faculty. Corequisite: BUS 360.

BUS 468-3 Management Issues in Information Systems
The focus of this course is on the management, not the technical, issues surrounding Information Technology. Using cases, the course will introduce various theories and models of the management of Information Technology (IT), the application of IT to management situations, and some of the current issues surrounding IT. (Lecture) Prerequisites: BUS 462 or BUS 466. Corequisite: BUS 360.

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 372 and 374 and will include advanced organizational theory and special topics in Personnel. (Seminar) Prerequisites: BUS 272 or 372 or 374; 60 credit hours. Corequisite: BUS 360.
BUS 473-5 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. (Lecture/Tutorial) Prerequisites: BUS 336; 60 credit hours. Corequisite: BUS 360.

BUS 476-3 Commercial Legal Relations
An examination of the legal environment within which businesses must function concentrating on the legal relationships between individuals and commercial organizations. This course will examine in further detail commercial relations such as employment, agency, partnership and corporations expanding on what was first introduced in BUS 393. Prerequisites: 60 credit hours and BUS 393 or BUEC 391 or permission of the Faculty. Corequisite: BUS 360.

BUS 477-4 Seminar in Small Business Administration
Emphasis will vary but may include in any given semester 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. (Seminar) Prerequisites: BUS 312, BUS 343; 90 credit hours. Corequisite: BUS 360.

BUS 478-3 Seminar in Administrative Policy
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. (Seminar) Prerequisite: 90 credit hours and completion of the core Business courses. Corequisite: BUS 360.

BUS 479-5 Business Strategies Simulation
This course will give students an opportunity to apply what they have learned in Business Policy 478, by being placed in the situation of running one of several companies in a simulated business environment. Students will learn to develop and execute comprehensive plans for the running of their firm. Firms are competing against other firms in a general manufacturing industry. Over the duration of the course students will typically execute twelve quarterly sets of decisions, simulating three years of corporate operations. Over this time, it is hoped that students will learn to assess the impact of their decisions on the ongoing performance not only of their own firm, but also of other firms in the industry against whom they are competing. The nature of the simulation is to draw upon knowledge learned in all core areas of the Business program - Marketing, Accounting, Finance, Organizational Behavior, Economics and Policy. In addition there will be opportunities to draw upon specialized skills learned in such areas as statistics and operations research. (Seminar) Prerequisite: 90 credit hours and completion of the core Business courses. Corequisite: BUS 360.

BUS 481-3 Human Resource Planning and Staffing
Development of specific manpower objectives from an analysis of organizational goals and strategy. An analysis of procedures and skills which are used to translate objectives into staffing decisions such as employee selection and placement. (Lecture/Tutorial) Prerequisites: BUS 272 (or 372), BUEC 232 (or STAT 270), and BUS 381; 60 credit hours. Corequisite: BUS 360.

BUS 482-3 Reward Systems and Employee Development
The design and administration of reward systems and employee development programs. How these systems and programs are affected by internal and external factors such as organizational goals, corporate strategy, technology, labor markets, and government regulations. (Lecture/Tutorial) Prerequisites: BUS 272 (or 372) and BUS 381; 60 credit hours. Corequisite: BUS 360.

BUS 483-3 Organizations and Careers
This course will examine various perspectives on careers; the processes by which individuals choose, enter, move through, and leave formal organizations. Also examined will be the literature which suggests that careers can be managed either by the individual or by the organization, as well as the literature which suggests that careers occur as a consequence of either random events or previously established social forces. (Seminar) Prerequisites: BUS 272 (or 372) or 374; 60 credit hours. Corequisite: BUS 360.

BUS 484-3 Workplace Industrial Relations
The administration of the day-to-day employment relationships of both unionized and non-unionized settings. Workplace industrial relations as a system of resolving conflicts between employee and employer interests and its implications for the
attainment of due process in the workplace and the flexibility and efficiency of work organization. (Seminar) Prerequisites: 60 credit hours; one of BUEC 384 or BUEC 385, BUS 272 (or 372), or BUS 374. Corequisite: BUS 360.

BUS 487-3 Organizational Development and Change
This course examines the underlying concepts, principles and assumptions of organizational development. Throughout the course, organizations are viewed as systems composed of subsystems in dynamic interaction. (Seminar) Prerequisites: BUS 272 (or 372); 60 credit hours. BUS 388 recommended. Corequisite: BUS 360.

BUS 488-3 Human Relations in Business
The study of individual and group behavior in business organizations; management-employee relations; systems of communication; role and status; compensation, motivation, morale and productivity; organizational conflict, change and balance. (Seminar) Prerequisites: BUS 272 (or 372); 60 credit hours. BUS 388 recommended. Corequisite: BUS 360.

BUS 492-3 Selected Topics in Business Administration
The subject matter will vary from semester to semester depending upon the interests of faculty and students. (Seminar) Prerequisites: permission of the Faculty; 60 credit hours.

BUS 493-3 Selected Topics in Business Administration
The subject matter will vary from semester to semester depending upon the interests of faculty and students. (Seminar) Prerequisites: permission of the Faculty; 60 credit hours.

BUS 494-3 Selected Topics in Business Administration
The subject matter will vary from semester to semester depending upon the interests of faculty and students. (Seminar) Prerequisites: permission of the Faculty; 60 credit hours.

BUS 495-3 Selected Topics in Business Administration
The subject matter will vary from semester to semester depending upon the interests of faculty and students. (Seminar) Prerequisites: permission of the Faculty; 60 credit hours.

BUS 496-5 Selected Topics in Business Administration
The subject matter will vary from semester to semester depending upon the interests of faculty and students. (Seminar) Prerequisites: permission of the Faculty; 60 credit hours.

BUS 498-3 Directed Studies
Independent reading and research on topics selected in consultation with the supervising instructor. Prerequisites: permission of the Faculty; 60 credit hours.

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. Prerequisites: permission of the Faculty; 60 credit hours.

Business Administration and Economics Undergraduate Courses

Faculties of Business Administration and Arts
See also course descriptions for Business Administration (BUS) and Economics (ECON).

The following 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.

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, a student must have obtained a grade of C- or higher.
BUEC 232-3 Elementary Economic and Business Statistics I
An introduction to elementary statistical techniques with emphasis on their application to business and economics. Students will be required to carry out projects of individual interest. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205 (one of these may be taken concurrently with BUEC 232); MATH 157. 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.

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. (Lecture/Tutorial) Prerequisites: 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.

BUEC 333-3 Elementary Economic and Business Statistics II
An introduction to more advanced statistical techniques including an introduction to econometrics and operations research. Students will be required to apply statistical techniques discussed to data they collect in analysing problems of individual interest. (Lecture/Tutorial) Prerequisites: ECON 103 or 200, 105 or 205, BUEC 232 or STAT 270, MATH 157 and 30 credit hours. Students with credit for ECON/COMM 236 may not take BUEC 333 for further credit.

BUEC 384-3 Industrial Relations
Industrial relations systems, legal and other environmental settings for labor management relations, structure of bargaining and bargaining organizations, political supplements or alternatives to collective bargaining. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours. Students with credit for BUEC 386 may not take BUEC 384 for further credit.

BUEC 385-3 Collective Bargaining
The collective agreement negotiation process and work stoppage: analytics, experience, legal and market constraints. Contents of the collective agreement. Administration of the collective agreement. Roles of third parties in collective bargaining. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours. Students with credit for BUEC 386 may not take BUEC 385 for further credit.

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. (Lecture/Tutorial) Prerequisite: 60 credit hours. 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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours.

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. (Lecture/Tutorial) Prerequisites: ECON 103 or 200 and 105 or 205; 60 credit hours.

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. (Lecture/Tutorial) Prerequisites: BUEC 333; 60 credit hours.
BUEC 495-3 Legal Aspects of Economic Relationships

A selected number of legal concepts will be examined in depth together with their effects on economic relationships. (Seminar)
Prerequisites: BUEC 391, ECON 103 or 200 and ECON 105 or 205; 90 credit hours; or permission of Faculty or department.

Education Undergraduate Courses

Faculty of Education

EDUC 220-3 Introduction to Education 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 222-2 Educational Psychology Laboratory
Laboratory experiences and exercises in educational psychology Corequisite: EDUC 220-3.

EDUC 230-3 Introduction to Philosophy of Education
This course 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.

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 Educational Practice in the Western World
This course will consist of a study of major trends in educational practice from antiquity to the present. May be applied towards the Certificate in Liberal Arts.

EDUC 280-3 Teaching French in BC
This course is intended for students who may be contemplating a career as a French-language teacher of core French or French immersion and who would like to explore the area of French teaching in Canada and particularly in BC. The general objective of this course is to help prospective French immersion or French second language teachers better understand this fast developing educational field, the profession of French second language teachers and acquire at the same time a basic knowledge of some principles of teaching French as a second language. The course will be offered in English or in French; the language of instruction will alternate from semester to semester. Students are allowed to write their term papers or exams in French or in English. Prerequisite: at least FREN 202 for those who wish to take the course in French. No French language requirements if the course is taken in English.

EDUC 320-3 Instructional Psychology
An examination of prominent theories of instruction and their basis in psychological research. Emphasis will be placed on theories of information processing, learning, and motivation as these relate to instruction. Prerequisite: EDUC 220.

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 report. 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. (Lecture/Seminar) Prerequisite: 60 hours of credit.

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 hours of credit.

EDUC 342-3 Contemporary Approaches to Literacy Instruction
The focus of this course is adult literacy, understood as the basic ability to read and write. The course is organized around four discrete units: (1) a general introduction to adult literacy education; (2) models of adult literacy instruction in developing societies; (3) models of adult literacy instruction in developed societies; and (4) the practicum proposal: the selection, justification and preparation to implement, in a particular, practical context one model of adult literacy instruction. This course is required for the Certificate in Literacy Instruction. Co-requisite: EDUC 341.

EDUC 343-5 Literacy Practicum
The literacy practicum is the vehicle through which students in the Certificate in Literacy Instruction implement and evaluate the model of adult literacy instruction developed in EDUC 342. Implementation may occur in a variety of contexts and institutions with adults; the literacy practicum will be supervised and may involve supervised teaching, curriculum developments, or research field work. Prerequisite: EDUC 342.

EDUC 347-3 Developmental Supervision
This course is intended for classroom teachers or administrators who wish to supervise student teachers in their classrooms as part of a professional preparation program. Concepts and practices related to the supervision of student teachers will be introduced. Theories and models of supervision will be discussed, and research on supervisory practices will be surveyed. Supervisory skills will be demonstrated and practised. The developmental model of supervision currently used in the Professional Development Program will be studied in detail. Prerequisites: This course is available to any teacher or administrator with a minimum of two years' classroom experience who is interested in working with student teachers. Supervisory experience is not required.

EDUC 361-3 Contemporary Issues and New Developments in Educational Practice
Examines new developments and current issues in teaching and educational practice. Prerequisite: 60 hours of credit.

EDUC 367-4 Integrating ESL Learners in Different School Subjects
There are important differences in the kinds of English used in different school subjects. A general purpose English as a second language (ESL) course may not provide ESL school children or adolescents with the kind of English required for academic survival in some subjects. This course provides subject area teachers with techniques for helping ESL learners in their classes to cope with the English specific to a given school subject. This course is not for specialists in ESL. This course may be used only once for credit toward a degree. Prerequisites: 60 hours of credit.

EDUC 370-399 (3, 4 or 6) Special Topics
Courses will explore major issues of present concern. Subjects to be taught and the exact assignment of credit (3, 4 or 6) and prerequisites will be announced prior to the beginning of each semester.

Note: A maximum of 12 semester hours of credit in Education Special Topics courses may be used toward a Bachelor of Education degree.

EDUC 401-8 Introduction to Classroom Teaching
(Not offered in Summer semester.) A half semester 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.
EDUC 402-7 Studies of Educational Theory and Practice
(Not offered in Summer semester.) A half semester 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.

EDUC 404-0 Semester on Campus
(Normally completed in the Summer semester.) Students undertake 14 to 18 semester credit hours of studies in Education and/or other faculties to complete the professional, academic and certification requirements. Prerequisites: EDUC 401/402.

Note: EDUC 404 is required for a BEd degree. Students completing degrees from the Faculties of Applied Sciences, Arts, Business Administration or Science may apply credit for courses undertaken in EDUC 404 towards that degree. In order for the Faculty to recommend a student for certification, the student must achieve in EDUC 404 a GPA at least equivalent to that required for a degree in the University.

EDUC 405-15 Teaching Semester
(Not offered in Summer semester.) A full semester 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. Prerequisites: EDUC 401/402.

EDUC 406-5 Supervised Observation and Teaching
(Not normally offered in Summer semester) 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 credits.

EDUC 407-5 Field Based In-Service: Theory and Practice of Implementation
EDUC 407-5 provides a structure for teachers to use their own classrooms as the setting for systematically implementing new curriculum or institutional techniques. The course includes the following components: instruction in the theory and practice of implementation; classroom work; and seminars. - Theory and practice of implementation: This component allows teachers to systematically study theories, issues and practices in school based implementation and planned change; (10-20 hours) - Classroom work: This component recognizes that feedback, coaching, consultation and other aspects of on-site supervision are important features of successful implementation. EDUC 407-5 includes visits by a trained supervisor for observation, feedback and coaching; (approx. 30 hours) - Seminars: This component provides a forum for teachers to learn from one another. The seminar is scheduled on a regular basis to monitor progress, discuss concerns and solve problems; (10-20 hours) Related Course Work: EDUC 407-5 emphasizes the process of implementation and encourages teachers to identify relevant content unique to their professional needs. A fourth component, recent or concurrent education course work provides the academic and professional background on which to base the implementation projects.

EDUC 407 may be completed ONCE only for a Simon Fraser University degree program or Post Baccalaureate Diploma Program.

Prerequisites: EDUC 405, teaching experience and permission of the department. Grading will be on a pass/withdrawal basis.

EDUC 420-4 Cognitive Strategies in Learning
Current theory and research on cognitive strategies; applied research about teaching cognitive strategies. Prerequisites: EDUC 220 and 320.

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. Prerequisites: 60 hours of credit and EDUC 220, or EDUC 401/402.
EDUC 424-4 Learning Disabilities: Laboratory  
Supervised experience in analysis and evaluation of treatment strategies to be used with classroom students having learning disabilities. (Lecture/Laboratory) Prerequisite or corequisite: EDUC 422.

EDUC 425-4 School Counselling for the Classroom Teacher  
Intended for senior students or practising teachers who wish to explore the area of school counselling and develop some counselling skills that can be used within a classroom setting. A combination of lectures, discussion and supervised practice will be used as a means for exploring such areas as the role of the school counsellor, school counselling systems, vocational decision-making, standardized testing, communication skills, and "affective" development. Prerequisites: EDUC 401/402, EDUC 220 or PSYC 100 and 102.

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. Prerequisites: 60 hours of credit.

EDUC 428-4 Nature and Nurture of the Gifted  
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. Prerequisites: 60 hours of credit and EDUC 220.

EDUC 431-4 Education and Changing Concepts of Childhood  
This course will consist of a study of some of the origins of twentieth century concepts of childhood and their relationship to educational thought and practice in the western world. Prerequisite: 60 hours of credit. May be applied towards the Certificate in Liberal Arts.

EDUC 432-4 Philosophical Issues in Teaching  
A number of classroom practices and teacher related activities are philosophically examined. Assumptions underlying these practices are made explicit; the meaning and structure of the arguments clarified; and the merits of the arguments assessed. Examples of topics to be discussed are: education, teaching, instruction, indoctrination, individualization, play, creativity, discipline, and open education. Prerequisite: 60 hours of credit.

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 hours of credit.

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; Moral education and values education. Prerequisite: 60 hours of credit. Students with credit for EDUC 436 may not take EDUC 437 for further credit.

EDUC 439-4 Educational Administration: Theory and Practice  
Provides an introduction to the study of educational administration. Topics covered include the organization and administration of education in Canada, the political context of education, social factors influencing education, educational finance, and legal issues in education. Emphasis is placed on both knowledge acquisition and skill development. Practice is provided in the solution of administrative problems in education. Prerequisite: EDUC 401/402.

EDUC 441-4 Multicultural Education  
Social and psychological dimensions of multiculturalism in Canada and implications for education. Topics include: dealing with prejudice, discrimination, stereotyping and value conflicts, developing multicultural education programs and analysis of social issues which impinge on educational practice. Prerequisite: 60 hours of credit.
EDUC 445-4 Legal Context of Teaching
This course is 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 hours of credit.

EDUC 446-4 Law for the Classroom Teacher
The course provides teachers with the necessary background understanding of the law and legal practices required to teach the law-related dimensions of the BC curricula. The major focus will be on the areas of law, and legal concepts and procedures included in the secondary Social Studies and Law 12 curricula. Prerequisite: 60 hours of credit.

EDUC 448-4 Law in the Curriculum
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 hours of credit.

EDUC 450-4 Classroom French Curriculum Studies
This course is intended for students who may be contemplating a career as French-language teachers of core French or French immersion and who would like to gain a broader view of the French second language teacher profession while improving their knowledge of the language and culture in a classroom context. The course is given in French on campus. The general objective of this course is to help prospective French teachers better understand the pedagogical relevance of and the relationship between cultural competence and communicative competence. Prerequisites: FREN 301 and 370.

EDUC 451-4 Classroom French Curriculum Practices
Classroom French Curriculum Studies which is given on campus. The general objective of this course is to help prospective French teachers better understand the pedagogical and cultural relevance of a variety of French language registers and of their significance to second language teaching. Prerequisites: FREN 301 and 370.

EDUC 452-8 Environmental Education
This course will examine the educational problems entailed in developing human awareness and understanding of the environment. The course will explore environmental issues through a multi-disciplinary approach and will relate 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/withdrawal basis. A $35 field activity fee will be levied in this course. Normally offered in Summer Session only. Prerequisites: EDUC 401/402.

EDUC 456-4 Models of the 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. (Seminar/Studio) Prerequisite: 60 hours of credit.

EDUC 457-4 Drama and Education
This course deals with theory, curricula and methodologies in drama education. Topics to be covered 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 to students. Prerequisite: EDUC 401/402.

EDUC 459-4 Instructional Activities in Elementary School Physical Education
This course focuses on the theoretical and curriculum content of the elementary school physical education program (K-7). Emphasis is given to the movement education orientation as it pertains to the various program activities and approaches applicable to both primary and intermediate school age children. (Offered in the Summer semester only.) Prerequisite: EDUC 405.
Note: This course is available for Elementary School Physical Education minors only.

EDUC 461-4 Trends and Developments in In-Service Education
Examines trends and developments in In-Service Education as they apply to staff development and the implications for school improvement. Prerequisite: EDUC 401/402.

EDUC 463-4 Educational Media
Media in relation to methodologies of teaching, learning and curriculum design; development of instructional materials in laboratory settings. Prerequisites: EDUC 401/402.

EDUC 464-4 Early Childhood Education
Current trends, issues and research relating to the education of young children. Prerequisite: 60 hours of credit.

EDUC 465-4 Children's Literature
Historical, sociological and literary perspectives on literature for children. Prerequisite: 60 hours of credit.

EDUC 467-4 Curriculum and Instruction in Teaching English as a Second Language
Students will learn to use English language teaching grammar appropriately, to evaluate and use methods of teaching English as a second language, to do error analyses, and to adapt commercial programmes to the specific needs of learners. This course is designed for teachers and prospective teachers. Prerequisite: 60 hours of credit and ENGL 370 or a Linguistics course.

EDUC 468-4 Recent Advances in the Teaching of English as a Second Language
New developments in teaching practice, curriculum development and second language learning research will be explored. Students are expected to have acquired previously a basic level of competence in methods for teaching English as a second language. Prerequisite: EDUC 467.

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. (Seminar/Workshop) Prerequisite: 60 hours of credit.

EDUC 470-4 Experience in Teaching Students Who Have Limited English Proficiency
This course is for those who intend to teach people with limited proficiency in English. It permits teachers to develop those classroom skills specific to teaching the English language to non-native speakers and to reflect upon their own development as teachers. Prerequisites: LING 220 or 310, and EDUC 467 offered through Centre for Distance Education only. See Centre for Distance Education well in advance of registration time to obtain the form letter that your employer or supervisor of volunteer teachers must complete. (Only students with a current teaching placement may enroll in this course.)

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 hours of credit.

Notes about EDUC 472 to 482 Designs for Learning Courses
Planning for learning; creating learning environments; developing teaching strategies and materials. Sections in each course will deal with applications at different levels of schooling.

EDUC 472-4 Language Arts
(including whole language) Prerequisites: EDUC 401/402.

EDUC 473-4 Reading
Prerequisites: EDUC 401/402.

EDUC 474-4 Social Studies
This course focuses on the theory and practice of Social Studies education with major emphasis on instructional strategies. Topics include: the nature and purposes of Social Studies, the BC curriculum, unit planning and an examination of such strategies.
as inquiry methods, critical thinking, procedures, simulations, group work and community interaction. Prerequisites: EDUC 401/402.

EDUC 475-4 Mathematics
Prerequisites: EDUC 401/402.

EDUC 476-4 Natural Sciences
This is an introductory course in the curriculum and methodology of science education. The course addresses contemporary programs in science intended for use in public schools, K-12, as well as public awareness programs related to the social impact of science and technology. Prerequisites: EDUC 401/402.

EDUC 477-4 Art
Prerequisites: EDUC 401/402.

EDUC 478-4 Music
Prerequisites: EDUC 401/402.

EDUC 479-4 Physical Education
Prerequisites: EDUC 401/402.

EDUC 480-4 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. Prerequisites: EDUC 401/402 and FREN 206. Instruction given in French.

EDUC 481-4 French Immersion and Programme-cadre de Francophone
History, definition and growth of immersion (a Canadian phenomenon) and its relations to Programme-cadre in British Columbia. Emphasis on integration of four skills (listening, speaking, reading and writing) particularly on speaking. Error analysis, teaching techniques and development of activity centres. Exploration and adaptation of various commercial programs in different subjects (e.g. French, Math). Prerequisites: EDUC 401/402 (French Immersion). Instruction given in French.

EDUC 482-4 Educational Uses of Computers
Students will develop a critical understanding of the role of computers in education and will learn how microcomputers can be used. The course focuses on learning about computers and software and provides experience with courseware designed for instruction and software tools designed to facilitate the task of teaching. Prerequisites: EDUC 401/402.

EDUC 483-8 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. Prerequisites: EDUC 401/402 or equivalent.

EDUC 485-8 Designs for Learning: Writing
The course is 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. Prerequisites: EDUC 401/402.

EDUC 486-489 (3, 4 or 6) Special Topics
Sections will deal with major issues of present concern. Subjects to be discussed will be announced during the semester prior to that in which the course is to be offered. The exact assignment of credit hours (3, 4 or 6) and prerequisites for the special topics offering will be announced prior to the beginning of each semester.
Note: A maximum of 12 semester hours of credit in Education special topics courses may be used toward a Bachelor of Education degree.

EDUC 490-2,4 Directed Study
EDUC 491-2,4 Directed Study
EDUC 492-2,4 Directed Study
Directed study in education under the supervision of a faculty member. Prerequisites: approval of Director of Undergraduate Programs, consent of supervising faculty member, and permission of the instructor is necessary prior to registration. Directed study courses may be completed once only. A maximum of three Directed Studies courses will be approved for any student within the requirements for the BEd degree. Applications are available in the Undergraduate Programs Office.

EDUC 495-498 (3, 4 or 6) Special Topics
Sections will deal with major issues of present concern. Subjects to be discussed will be announced during the semester prior to that in which the course is to be offered. The exact assignment of credit hours (3, 4 or 6) for the special topics offering will be announced prior to the beginning of each semester. Prerequisite: EDUC 401/402 or permission of instructor.

Note: A maximum of 12 semester hours of credit 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.

Education Professional Undergraduate Courses

Faculty of Education

EDPR 410-413 (2, 3, 4 or 5) Field Based Studies in Curriculum Development
These courses are intended for practising teachers, school administrators or other practising educators who are involved in curriculum development. They provide 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 Relations and Teacher In-Service Education, before the end of the fifth week of the semester prior to the one in which the student intends to commence the study. The proposal must be approved by the Director of Field Relations and Teacher In-Service Education prior to registration in the course. Field Based Studies courses may have a credit value of 2, 3, 4 or 5 semester hours 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. These courses 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 Relations and Teacher In-Service Education. Maximum of 10 credit hours of Field Based Studies in Curriculum Development may be used towards a BEd degree.

EDPR 414-417 (2, 3, 4 or 5) Field Based Studies in Educational Practice
These courses are 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 Relations and Teacher In-Service Education, before the end of the fifth week of the semester prior to the one in which the student intends to commence the study. The proposal must be approved by the Director of Field Relations and Teacher In-Service Education prior to registration in the course. Field Based Studies courses may have a credit value of 2, 3, 4 or 5 semester hours depending upon the nature of the project proposal. Evaluation is based on a pass/withdrawal system. Field Based Studies in Educational Practice may not form a component of EDUC 404. These courses 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 Relations and Teacher In-Service Education. A maximum of 10 semester hours of credit of Field Based Studies in Educational Practice may be used towards a BEd degree.
Applied Mathematics Program
Location: K10512 Shrum Science Centre
Telephone: 778.782.3331/778.782.3332

Professors Emeriti
G.N. Bojadziev PhD (Sofia Mech Eng Inst
R.W. Lardner BA, PhD, ScD (Camb)
E.M. Shoemaker BS, MS, PhD (Carnegie Tech)
M. Singh AB, MA (Punj), MSc, PhD (Brown)

Associated Faculty with Department of Mathematics and Statistics
A. Das
G.A.C. Graham
M.C.A. Kropinski
E. Pechlaner
R.D. Russell
C.Y. Shen
T. Tang
M.R. Trummer

Advisors
Mrs. M. Fankboner BA (Occidental), MSc (S Fraser), TLX10511 Shrum Science Centre, 778.782.4849
Dr. G.A.C. Graham BA (Dublin), MS (Brown), PhD (Glas), TLX 10527 Shrum Science Centre, 778.782.3337

Applied Mathematics consists of areas of mathematics which are closely related to such traditional fields as the physical sciences
and engineering, but nowadays sophisticated mathematical tools are used over a wide spectrum of disciplines. With the rapid
development of computers in recent years, applied mathematics is becoming increasingly computationally oriented. Applied
mathematicians are in increasing demand and the good student in the field is virtually sure of an interesting career whether she/he
chooses industrial research, government laboratory or university.

The Department of Mathematics and Statistics offer sufficient courses at the undergraduate level for a student to specialize in
Applied Mathematics. Details of a program for students interested in the Applied Mathematics of physics and engineering are
given below. In addition, there are joint honors degree programs in Mathematics and Computer Science and in Mathematical
Physics, both of which can include a substantial number of Applied Mathematics courses. A concentration in Applied
Mathematics can also provide an excellent basis for a career in Engineering, and the programs in Engineering Science at Simon
Fraser University make considerable use of courses in this area.

Undergraduate courses
Information on MATH and STAT undergraduate courses.

Honors Program

Lower Division Requirements
(38-39 semester hours plus electives)

one of
CMPT 101-4 Modula 2
CMPT 102-3 Introduction to FORTRAN for Science Students
CMPT 103-3 Introduction to Pascal Programming

all of
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 242-3 Introduction to Analysis
MATH 251-3 Calculus III
MATH 252-3 Vector Calculus
* MATH 262-4 Engineering Mechanics I
* MATH 263-4 Engineering Mechanics II
PHYS 120-3 Modern Physics and Mechanics
PHYS 121-3 Optics, Electricity and Magnetism
STAT 270-3 Introduction to Probability and Statistics

**Upper Division Requirements**
(48 semester hours plus electives)

MATH 310-3 Introduction to Ordinary Differential Equations
MATH 313-3 Differential Geometry
MATH 314-3 Boundary Value Problems
MATH 320-3 Advanced Calculus of One Variable
MATH 322-3 Complex Variables
MATH 361-3 Mechanics of Deformable Media
MACM 316-3 Numerical Analysis I

* at least one of
  MATH 308-3 Linear Programming
  MATH 416-3 Numerical Analysis II
  STAT 380-3 Introduction to Stochastic Processes

* at least four of
  MATH 309-3 Continuous Optimization
  MATH 408-3 Discrete Optimization
  MATH 415-3 Ordinary Differential Equations
  MATH 418-3 Partial Differential Equations
  MATH 419-3 Linear Analysis
  MATH 424-3 Applications of Complex Analysis
  MATH 438-3 Linear Algebra
  STAT 330-3 Linear Models in Applied Statistics

* at least four of
  MATH 462-3 Fluid Dynamics
  MATH 466-3 Tensor Analysis
  MATH 467-3 Vibrations
  MATH 470-3 Variational Calculus
  MATH 471-3 Special Relativity
  PHYS 413-3 Advanced Mechanics

Choices from the above must include at least five courses at the 400 level and the number of credit hours must total at least 132, of which at least six hours must be in the Faculty of Arts. At least six further hours must be in a faculty other than Science, and at least 60 hours must be at the upper division.

**Major Program**

**Lower Division Requirements**
(38-39 semester hours plus electives)

* one of
  CMPT 101-4 Modula 2
  CMPT 102-3 Introduction to FORTRAN for Science Students
  CMPT 103-3 Introduction to Pascal Programming

* all of
  MATH 151-3 Calculus I
  MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 242-3 Introduction to Analysis
MATH 251-3 Calculus III
MATH 252-3 Vector Calculus
* MATH 262-4 Engineering Mechanics I
* MATH 263-4 Engineering Mechanics II
PHYS 120-3 Modern Physics and Mechanics
PHYS 121-3 Optics, Electricity and Magnetism
STAT 270-3 Introduction to Probability and Statistics

Upper Division Requirements
(30-32 semester hours plus electives)

MACM 316-3 Numerical Analysis I
MATH 310-3 Introduction to Ordinary Differential Equations
MATH 313-3 Differential Geometry
MATH 314-3 Boundary Value Problems
MATH 320-3 Advanced Calculus of One Variable
MATH 322-3 Complex Variables

at least two of
MATH 308-3 Linear Programming
MATH 309-3 Continuous Optimization
MATH 408-3 Discrete Optimization
MATH 415-3 Ordinary Differential Equations
MATH 416-3 Numerical Analysis II
MATH 418-3 Partial Differential Equations
MATH 419-3 Linear Analysis
MATH 424-3 Applications of Complex Analysis
MATH 438-3 Linear Algebra
STAT 380-3 Introduction to Stochastic Processes

at least two of
MATH 361-3 Mechanics of Deformable Media
MATH 462-3 Fluid Dynamics
MATH 466-3 Tensor Analysis
MATH 467-3 Vibrations
MATH 470-3 Variational Calculus
MATH 471-3 Special Relativity
PHYS 413-3 Advanced Mechanics

Choices from the above must include at least three courses at the 400 level and the number of credit hours must total at least 120, of which at least 12 hours must be taken outside the Faculty of Science, including a minimum of six hours taken in the Faculty of Arts. At least six further hours must be in a Faculty other than the Faculty of Science, and at least 44 hours must be at the upper division.

*The package MATH 262 and 263 is well suited for students interested in engineering types of problems.
Mathematics Undergraduate Courses

Faculty of Science
See also courses listed under Actuarial Mathematics (ACMA), Mathematics and Computing Science (MACM) and Statistics (STAT).

Open Workshops for MATH Courses
(see courses marked with ** below)

Some introductory and service courses are organized through the department's open workshops. In addition to regularly scheduled lectures, students registered in these courses are encouraged to come to the workshops for assistance with problems and questions any time during posted working hours. At the workshop students will have the opportunity to meet with the co-ordinator, the teaching assistants and other students, and work together to understand mathematics in a friendly and helpful environment.

Basic Mathematics: TLX 9507; courses 100,110,190; Dr. M. Dubiel
Calculus and Linear Algebra; TLX 9505, courses 151,152,232; Mrs. T. Berggren
Applied Calculus: TLX 9503; courses 154,155,157,158; Dr. J.C. Arya

Downtown sections of these courses are not scheduled through the workshops but have regularly scheduled tutorials.

Beginning Level Requirements in Mathematics
Students considering registering in a mathematics courses who do not have BC Math 11 (or equivalent) with at least a grade of C must see the co-ordinator of the Basic Math Workshop. These students may take the non-credit course, Basic Algebra, offered through Continuing Studies.

The prerequisites for the first mathematics courses are as follows.

MATH 100,110,113,190 BC Math 11 (or equivalent) with a grade of at least C or permission of the department or the non-credit course, Basic Algebra, offered through Continuing Studies

MATH 157: BC Math 12 (or equivalent) with a grade of at least B; or MATH 110 with a grade of at least C-; or (with permission of the department) MATH 100 with a grade of at least C-

MATH 151,154: BC Math 12 (or equivalent) with a grade of at least B or MATH 100 with a grade of at least C-

MATH 144: BC Math 12 (or equivalent) or MATH 100 with a grade of at least C-

Students who are unsure of their level of preparation are strongly encouraged to take the free Math Assessment Test at the Basic Math Workshop, TLX 9507, the Evening Resource Centre P9310 (if the Workshop is closed) or Simon Fraser University at Harbour Centre.

Minimum Grade Requirement in Prerequisites for Later MATH Courses
Students enrolled in courses offered by the Mathematics and Statistics Department must have obtained grades of C- or better in prerequisite courses.

Some experience with a high level programming language is recommended by the beginning of the second year.

Courses marked with an asterisk (*) are intended to be particularly accessible to students who are not specializing in Mathematics.
No student may take, for further credit, any course offered by the Department of Mathematics and Statistics which is a prerequisite for a course the student has already completed with a grade of C- or higher, without permission of the department.

*MATH 100-3 Precalculus
Algebraic, exponential, logarithmic and trigonometric functions and their graphs. Conic sections, applications. (3-0-1**) Prerequisite: see above table. This course may not be taken for credit by students who already have credit for any Mathematics course for which this course (or BC Math 12) is a prerequisite. Students may not count more than one of MATH 100 or 110 for credit. MATH 100 may not be counted towards the Mathematics minor, major or honors degree requirements.

*MATH 110-3 Introductory Mathematics for the Social and Management Sciences
Linear and quadratic functions, sequences and sums, compound interest, exponential and logarithmic functions, counting techniques, probability. (3-0-1**) Prerequisite: see above table. This course may not be taken for credit by students who already have credit for any Mathematics course for which this course (or BC Math 12) is a prerequisite. Students may not count more than one of MATH 100 and 110 for credit. MATH 110 may not be counted towards the Mathematics minor, major or honors degree requirements.

*MATH 113-3 Euclidean Geometry
Plane Euclidean geometry, congruence and similarity. Theory of parallels. Polygonal areas. Pythagorean Theorem. Geometrical constructions. (3-1-0) Prerequisite: see above table.

*MATH 144-3 Introduction to Pure Mathematics
An introduction to proofs and techniques of proofs such as mathematical induction. The fundamental notions of modern Pure Mathematics such as logic, sets, functions and relations. (3-1-0) Prerequisite: see above table.

*MATH 151-3 Calculus I
Functions and graphs, conic sections, limits and continuity, derivatives, techniques and applications of differentiation, trigonometric functions, logarithms and exponentials, extrema, the mean value theorem and polar co-ordinates. (3-0-1**) Prerequisite: see above table. Students with credit for either MATH 154 or 157 may not take MATH 151 for further credit.

*MATH 152-3 Calculus II
Integrals, techniques and applications of integration, approximations, sequences and series, area and arc length in polar coordinates. (3-0-1**) Prerequisite: MATH 151 or 154; or MATH 157 with a grade of A or B. Students with credit for MATH 155 or 158 may not take MATH 152 for further credit.

*MATH 154-3 Calculus I for the Biological Sciences
This course is 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. (3-0-1**) Prerequisite: see above table. Students with credit for either MATH 151 or 157 may not take MATH 154 for further credit.

*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. (3-0-1**) Prerequisite: MATH 151 or 154; or MATH 157 with a grade of A or B. Students with credit for MATH 152 or 158 may not take MATH 155 for further credit.

*MATH 157-3 Calculus for the Social Sciences I
This course is designed for students specializing in business or the social sciences. Topics include: limits, growth rate and the derivative; logarithmic and exponential functions and their application to business, economics, optimization and approximation methods; functions of several variables. (3-0-1**) Prerequisite: see above table. Students with credit for either MATH 151 or 154 may not take MATH 157 for further credit.

*MATH 158-3 Calculus for the Social Sciences II
Theory of integration and its applications; introduction to differential equations with emphasis on some special first-order equations and their applications to economics and social sciences; algebraic operations with matrices, systems of linear equations,
determinants, introduction to linear programming. (3-0-1**) Prerequisite: MATH 151 or 154 or 157. Students with credit for MATH 152 or 155 may not take MATH 158 for further credit.

MATH 161-0 Honors Supplement for Calculus I
The class meets one hour each week. Students will spend most of the time working on challenging problems relating to the material of MATH 151, Calculus I but will also have the opportunity to investigate many different areas of mathematics. (0-1-0) Prerequisite: a grade of A or better in Math 12 (or equivalent) or a grade of A or better in MATH 151 or permission of the Department. This course will be graded on a Pass/No Entry basis.

MATH 162-0 Honors Supplement for Calculus II
The class meets one hour each week. Students will spend most of the time working on challenging problems relating to the material of MATH 152 Calculus II, but will also have the opportunity to investigate many different areas of mathematics. (0-1-0) Prerequisites: a grade of A or better in MATH 151 or its equivalent and a grade of Pass in MATH 161 or permission of the instructor. This course will be graded on a Pass/No Entry basis.

MATH 171-1 Computer Explorations in Calculus I
This supplement to MATH 151/154/157 gives students the opportunity to explore and investigate the underlying principles of differential calculus using leading edge computer software currently used in mathematical and scientific research and industry. Previous experience with computers would be beneficial, but it is not required. (1-0-2**) Prerequisite: BC Math 12 (or equivalent) with a grade of at least B or MATH 100 with a grade of at least C. Corequisite: MATH 151, 154 or 157. Other students may register with special permission.

MATH 172-1 Computer Explorations in Calculus II
This supplement to MATH 152/155/158 gives students the opportunity to explore and investigate the underlying principles of integral calculus using leading edge computer software currently used in mathematical and scientific research and industry. Previous experience with computers would be beneficial, but it is not required. Prerequisite: MATH 151, 154 or 157. Corequisite: MATH 152, 155, or 158. Other students may register with special permission.

*MATH 190-4 Principles of Mathematics for Teachers
Mathematical ideas involved in number systems and geometry in the elementary school curriculum. Whole number, fractional number, and rational number systems. Plane geometry, solid geometry, metric geometry, and motion geometry. (4-0-1**) Prerequisite: see above table. This course may not be counted toward the Mathematics minor, major or honors degree requirements. Candidates for degrees in the Faculty of Science may not use this course for the satisfaction of degree requirements. Students who have taken, have received transfer credit for, or are currently taking MATH 151, 154 or 157 may not take MATH 190 for credit without permission from the Mathematics and Statistics Department.

MATH 198-3 Selected Topics in Mathematics
Topics in areas of mathematics and statistics not covered in the regular undergraduate curriculum of the department. (3-1-0) Prerequisite: dependent on the topic covered.

MATH 232-3 Elementary Linear Algebra
Matrix arithmetic, linear equations, and determinants. Real vector spaces and linear transformations. Inner products and orthogonality. Eigenvalues and eigenvectors. (3-0-1**) Prerequisite: MATH 151 or 154 or 157.

MATH 242-3 Introduction to Analysis
Mathematical induction. Limits of real sequences and real functions. Continuity and its consequences. The Mean Value Theorem. The Fundamental Theorem of Calculus. Series. (3-1-0) Prerequisite: MATH 152 or 155.

MATH 243-3 Discrete Mathematics
Induction, elementary counting, pigeon-hole principle, generating functions and recurrence relations, graphs and trees, partially ordered sets. (3-1-0) Prerequisites: MATH 152 or 155; or MATH 158 with a grade of at least B.
MATH 251-3 Calculus III
Vectors, solid analytic geometry, differential calculus of several variables, multiple integrals, cylindrical and spherical coordinates, line integrals. (3-1-0) Prerequisite: MATH 152 or 155; or MATH 158 with a grade of A or B. It is recommended that MATH 232 be completed before this course is attempted.

MATH 252-3 Vector Calculus
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. (3-1-0) Prerequisites: MATH 232 and 251. Students with credit for MATH 312 may not take MATH 252 for further credit.

MATH 252-3 Calculus III
Vectors, solid analytic geometry, differential calculus of several variables, multiple integrals, cylindrical and spherical coordinates, line integrals. (3-1-0) Prerequisite: MATH 152 or 155; or MATH 158 with a grade of A or B. It is recommended that MATH 232 be completed before this course is attempted.

MATH 252-3 Vector Calculus
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. (3-1-0) Prerequisites: MATH 232 and 251. Students with credit for MATH 312 may not take MATH 252 for further credit.

MATH 252-3 Calculus III
Vectors, solid analytic geometry, differential calculus of several variables, multiple integrals, cylindrical and spherical coordinates, line integrals. (3-1-0) Prerequisite: MATH 152 or 155; or MATH 158 with a grade of A or B. It is recommended that MATH 232 be completed before this course is attempted.

MATH 252-3 Vector Calculus
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. (3-1-0) Prerequisites: MATH 232 and 251. Students with credit for MATH 312 may not take MATH 252 for further credit.

MATH 262-4 Engineering Mechanics I
Vectors. Reduction of force systems, equipollent systems of forces. Plane statics, free body diagram, trusses, frames, friction. Statics in space. Beams and cables. Centroids. Second moments of areas. (3-2-0) Prerequisites: MATH 152 (preferably) or 155 must precede or be taken concurrently; and PHYS 120.

MATH 263-4 Engineering Mechanics II
Newton's laws. Moments of inertia. Principles of dynamics; work and energy. Kinematics and kinetics of rigid bodies, plane motion of rigid bodies. (Dynamics of rigid bodies is the topic for this course.) (3-2-0) Prerequisites: MATH 262; MATH 251 (or 253) must precede or be taken concurrently. MATH 262 may be waived with the permission of the department. Students may not count more than one of MATH 263 or PHYS 212 for credit.

MATH 291-2, 292-3 Selected Topics in Mathematics
The topics included in these courses will vary from semester to semester, depending on faculty availability and student interest. (2-1-0), (3-1-0) Prerequisites will be specified according to the particular topic or topics offered. Each course may not count more than once toward degree requirements.

*MATH 308-3 Linear Programming
Theory and applications of linear programming, geometric and computational considerations, networks, applications of duality. (3-1-0) Prerequisite: MATH 232. Recommended: MATH 243 or MACM 201.

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. (3-1-0) Prerequisites: MATH 232 and 251; MATH 308 is recommended.

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. (3-1-0) Prerequisite: MATH 152 or 155; or MATH 158 with a grade of A or B. It is strongly recommended that MATH 232 be completed before this course is attempted.

MATH 311-3 Differential Geometry
Curvature and torsion for space curves, Frenet formulae, tangents and normals to surfaces, curvatures of a surface, special points and curves on surfaces, calculus on surfaces. (3-1-0) Prerequisite: MATH 252.

MATH 314-3 Boundary Value Problems
Separation of variables for the conduction equation, the wave equations and Laplace's equation. Sturm-Liouville problems. Separation in polar co-ordinates. Laplace transforms. (3-1-0) Prerequisites: MATH 252 (or 253) and 310.

MATH 320-3 Advanced Calculus of One Variable
Sequences and series of functions; uniform convergence; consequences of uniform convergence; improper integrals; additional applications of convergence. (3-1-0) Prerequisites: MATH 242 and 251.
MATH 322-3 Complex Variables
Functions of a complex variable, differentiability, contour integrals, Cauchy's theorem, Taylor and Laurent expansions, method of residues. (3-1-0) Prerequisite: MATH 251. Students with credit for MATH 422 may not take MATH 322 for further credit.

MATH 332-3 Introduction to Applied Algebraic Systems
An introduction to groups, rings and fields with applications to cryptography, codes and counting techniques based on permutation groups. (Lecture/Tutorial) Prerequisites: MATH 232.

MATH 336-0 Job Practicum I
This is the first semester 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. Prerequisite: Students must apply to and receive permission from the Department of Mathematics and Statistics at least one semester in advance. They will normally be required to have completed 45 semester hours of credit with a GPA of 2.5. This course will be graded on a pass/withdraw basis. A course fee is required.

MATH 337-0 Job Practicum II
This is the second semester of work experience in a Co-operative Education program available to Mathematics students. Prerequisites: MATH 336 and permission of the Co-op Co-ordinator; students must apply at least one semester in advance. This course will be graded on a pass/withdraw basis. A course fee is required.

MATH 339-3 Groups and Symmetry
Symmetries, groups, subgroups and generators, isomorphisms, dihedral groups, matrix groups, products, Cayley's Theorem, Lagrange's Theorem and Cauchy's Theorem. (Lecture) Prerequisite: MATH 232.

MATH 342-3 Elementary Number Theory
Divisibility of primes, congruences, arithmetic functions and related topics. Prerequisite: any 200 level MATH or MACM course. (3-0-0)

MATH 343-3 Applied Discrete Mathematics
Discrete modelling, generation of combinatorial objects, matching theory, scheduling, applications of graphs. (3-1-0) Prerequisite: MATH 243 or MACM 201. A computing language is recommended.

MATH 361-3 Mechanics of Deformable Media
Analysis of deformation and stress and an introduction to constitutive equations for different materials. (3-1-0) Prerequisites: MATH 252 (or 253) and MATH 262 (or PHYS 120 with permission of the department).

MATH 380-3 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. (3-1-0) Prerequisites: MATH 151, 232 and one of 152 or 113. Students who have taken MATH 180 may not take MATH 380 for additional credit.

MATH 398-3 Selected Topics in Mathematics
Topics in areas of mathematics and statistics not covered in the regular undergraduate curriculum of the department. (3-1-0) Prerequisite: dependent on the topic covered.

MATH 408-3 Discrete Optimization
Modelling techniques, integer programming, network flows, dynamic programming, and combinatorial max-min relations. Computational aspect of the preceding. (3-1-0) Prerequisite: MATH 308 and 343. (MATH 343 may be taken concurrently.)

MATH 415-3 Ordinary Differential Equations
Existence and uniqueness theorems, Green's functions for second order equations, plane autonomous systems, stability, expansions about ordinary and singular points. (3-0-0) Prerequisites: MATH 310; 314 and 322 are recommended.
MATH 416-3 Numerical Analysis II
The numerical solution of ordinary differential equations and elliptic, hyperbolic and parabolic partial differential equations will be considered. (3-0-0) Prerequisites: MATH 310 (or 352) and MACM 316.

MATH 418-3 Partial Differential Equations
First-order equations, the wave equations, characteristics, Riemann's method, Laplace's equation, Green's and Neumann's functions, Poisson formula. (3-0-0) Prerequisite: MATH 314 (or PHYS 384) or permission of the department. MATH 313 is recommended.

MATH 419-3 Linear Analysis
Convergence in Euclidean spaces, Fourier series and their convergence, Legendre polynomials, Hermite and Laguerre polynomials. (3-0-0) Prerequisites: MATH 232, 251 and 310. MATH 314 and 320 are recommended.

MATH 424-3 Applications of Complex Analysis
Conformal mapping, application to boundary value problems, Schwarz-Christoffel transformation, integral formulas, analytic continuation, argument principle. (3-0-0) Prerequisite: MATH 322.

MATH 425-3 Introduction to Metric Spaces
Metric spaces, convergence in metric spaces, continuity, compactness, connectedness and completeness, contraction mapping principle, and other useful theorems. (3-0-0) Prerequisite: MATH 320.

MATH 426-3 Introduction to Lebesgue Theory
An introduction to the Lebesgue integral and some of its applications. (3-0-0) Prerequisite: MATH 320.

MATH 436-0 Job Practicum III
This is the third semester of work experience in a Co-operative Education program available to Mathematics students. Prerequisites: MATH 337 and permission of the Co-op Co-ordinator; students must apply at least one semester in advance. This course will be graded on a pass/withdraw basis. A course fee is required.

MATH 437-0 Job Practicum IV
This is the fourth semester of work experience in a Co-operative Education program available to Mathematics students. Prerequisites: MATH 436 and permission of the Co-op Co-ordinator; students must apply at least one semester in advance. This course will be graded on a pass/withdraw basis. A course fee is required.

MATH 438-3 Linear Algebra
Linear Algebra. Vector space and matrix theory. (3-1-0) Prerequisite: MATH 332 or 339 or permission of the instructor.

MATH 439-3 Algebraic Systems
Algebraic systems including, for example, groups, rings. Polynomial theory. Prerequisite: MATH 332. (3-0-0)

MATH 440-3 Galois Theory
An introduction to the theory of fields, with emphasis on Galois theory. (3-0-0) Prerequisites: MATH 332.

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. (3-0-0) Prerequisites: MATH 232; MATH 243 or MACM 201.

MATH 444-3 Topology
Development of elementary theory of topological spaces. (3-0-0) Prerequisite: MATH 425, or permission of the department.

MATH 445-3 Introduction to Graph Theory
Connectivity, Eulerian graphs, Hamiltonian graphs, planar graphs, matchings, vertex coloring, and applications of graphs. (3-0-0) Prerequisite: MATH 243 or MACM 201.
MATH 447-4 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. (4-0-0) Prerequisite: MATH 232; MATH 439 is recommended.

MATH 451-3 Mathematical Logic
Introduction to the theory of formal systems and to the theory of recursion. (3-1-0) Prerequisite: fifth level standing preferably with some Mathematics courses at the 400 division.

MATH 452-3 Set Theory
Introduction to Zermelo Fraenkel set theory. (3-0-0) Prerequisite: MATH 242.

MATH 462-3 Fluid Dynamics
Kinematics, Navier-Stokes equations of motion, viscous flows, dynamical similarity, Reynolds number, Boundary layer theory. (3-0-0) Prerequisite: MATH 361; MATH 314 (or PHYS 384) should precede or be taken concurrently.

MATH 466-3 Tensor Analysis
Tensors, Riemannian space, applications to classical dynamics, hydrodynamics and elasticity. (3-1-0) Prerequisite: MATH 252. MATH 313 is recommended.

MATH 467-3 Vibrations
Vibrations of discrete systems with many degrees of freedom; matrix methods. Non-linear vibrations; the phase plane; singular points and limit cycles. Perturbation methods; singular perturbation expansions. (3-0-0) Prerequisites: MATH 232 and 310. MATH 263 (or PHYS 211) and MATH 314 are recommended.

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. (3-1-0) Prerequisites: MATH 310 and either MATH 262 or PHYS 211. MATH 313 or PHYS 384 should precede or be taken concurrently.

MATH 471-3 Special Relativity
Space-time continuum, separation between events. Lorentz transformation. Mechanics of discrete system and of continuum. Electromagnetic field in vacuo. (3-1-0) Prerequisites: MATH 313 or PHYS 384.

MATH 491-2 Honors Essay
Selected topics. Prerequisite: written permission of the Department Undergraduate Studies Committee.

MATH 492-4, 493-4, 494-4, 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 495-4, 496-4, 498-3 Selected Topics in Mathematics
The topics included in these courses will vary from semester to semester depending on faculty availability and student interest. (4-1-0), (4-1-0), (3-1-0) Prerequisites: will be specified according to the particular topic or topics offered under these course numbers.
Statistics Undergraduate Courses

Faculty of Science
See also courses listed under Actuarial Mathematics (ACMA), Mathematics and Computing Science (MACM) and Mathematics (MATH).

Open Workshop for STAT Courses
(see courses marked with ** below)

Some introductory and service courses are organized through the department's open workshops. In addition to regularly scheduled lectures, students registered in these courses are encouraged to come to the workshops for assistance with problems and questions any time during posted working hours. At the workshop students will have the opportunity to meet with the coordinator, the teaching assistants and other students, and work together to understand statistics in a friendly and helpful environment. Supplementary course materials, Macintosh computers and calculators are available for student use.

Statistics Workshop; K9516 101,103, 270, 301, 302; Ms X.Q. Chen

Beginning Level Requirements in Statistics
Students considering registering in a statistics course who do not have BC High School Math 11 (or equivalent) must see the coordinator of the Basic Math Workshop (as described under Mathematics in the Course Description Index). These students may take the non-credit basic math course, Basic Algebra, offered through Continuing Studies.

Students who are unsure of their level of preparation are strongly encouraged to take the free math assessment test at the Basic Math Workshop, TLX 9507, the Academic Resource Office P9310 (if the workshop is closed) or Simon Fraser University at Harbour Centre.

Minimum Grade Requirement in Prerequisites for Later STAT Courses
Students enrolled in courses offered by the Mathematics and Statistics Department must have obtained grades of C- or better in prerequisite courses.

Some experience with a high level programming language is recommended by the beginning of the second year.

No student may take, for further credit, any course offered by the Department of Mathematics and Statistics which is a prerequisite for a course the student has already completed with a grade of C- or higher, without permission of the department.

Courses marked with an asterisk (*) are intended to be particularly accessible to students who are not specializing in Statistics.

*STAT 101-3 Introduction to Statistics, Option A
An introductory course in random variables and their distributions, estimating and hypothesis testing. (3-0-1**) Prerequisite: see above table. 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, 103, 301, MATH 101 or 102 may not take STAT 101 for further credit.

*STAT 103-3 Introduction to Statistics for Social Sciences
A course similar to STAT 101 but directed to students in the social sciences. (3-0-1**) Prerequisite: BC High School Math 11 (or equivalent) or Basic Algebra 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 103. Students with credit for STAT 101, 102, 301, MATH 101 or 102 may not take STAT 103 for further credit.

STAT 270-3 Introduction to Probability and Statistics
Basic laws of probability, sample distributions. Introduction to statistical applications. (3-0-1**) Prerequisite: MATH 152 or 155 or 158 must precede or be taken concurrently. Students with credit for MATH 371 or 272 may not take STAT 270 for further credit.
STAT 280-3 Applied Probability Models
Review of elementary probability models. Conditional probability and conditional expectation. Fitting and testing adequacy of models. Applications to production management and quality control. Introduction to simple Markov chains, Poisson processes, inventories and queues. Reliability models including lifetime analysis and circuit configuration. (3-1-0) Prerequisite: STAT 270 (or MATH 272).

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 301-3 Statistics for the Life Sciences
An introductory course in research methodology and associated statistical analysis techniques for students with training in the life sciences. (3-1-0**) Prerequisites: either the student must have 45 semester hours of credit or a minimum of 30 semester hours including MATH 152 or 155. Students with credit for STAT 101, 102, 103 or 270 (formerly MATH 272) may not take STAT 301 for further credit. Mathematics minor, major and honors students may not use this course to satisfy the required number of semester hours of upper division mathematics. However, they may include the course to satisfy the total number of required hours of upper division credit.

*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. (3-0-1**) Prerequisite: STAT 101 (or MATH 101) or STAT 102 (or MATH 102) or STAT 103 or STAT 270 (or MATH 272) or STAT 301 or ARCH 376 or BUEC 232 (formerly 332). Students with credit for MATH 302 may not take STAT 302 for further credit. Mathematics major and honors students may not use this course to satisfy the required number of semester hours of upper division mathematics. However, they may include the course to satisfy the total number of required hours of upper division credit.

STAT 330-3 Linear Models in Applied Statistics I
Standard statistical inference procedures for analysing experimental and survey results. Statistical model building. Foundations of experimental design. (3-1-0) Prerequisites: MATH 232 and STAT 270 (MATH 272). Students with credit for MATH 372 may not take STAT 330 for further credit.

STAT 350-3 Linear Models in Applied Statistics II

STAT 380-3 Introduction to Stochastic Processes

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. (3-1-0) Prerequisites: dependent on the topic covered.

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. (3-1-0) Prerequisites: STAT 302 or STAT 350.

STAT 403-3 Intermediate Sampling and Experimental Design
A practical introduction to useful sampling techniques and intermediate level experimental designs. (3-0-2) Prerequisites: STAT 302. Students with credit for STAT 410 or 430 may not take STAT 403 for further credit. Mathematics minor, major and honors students may not use this course to satisfy the required number of semester hours of upper division mathematics credit. However, they may include the course to satisfy the total number of required hours of upper division credit.
STAT 410-3 Statistical Analysis of Sample Surveys
An introduction to the major sample survey designs and their mathematical justification. Associated statistical analyses. (3-1-0) Prerequisite: STAT 330 (or MATH 372) or permission of the instructor. Students with credit for MATH 304 may not take STAT 410 for further credit.

STAT 420-3 Non-Parametric Statistics
Non-parametric statistics concerns methods which do not involve special assumptions of parent distributions: tests based on the binomial distribution, contingency tables and chi-squared test; tests for two or more samples based on ranks and rank correlation statistics. (3-0-0) Prerequisite: STAT 330 (or MATH 372) or permission of the department. Students with credit for MATH 473 may not take STAT 420 for further credit.

STAT 430-3 Statistical Design and Analysis of Experiments
An extension of the designs discussed in STAT 330 to include more than one blocking variable, incomplete block designs, fractional factorial designs, and response surface methods. (3-1-0) Prerequisite: STAT 350 (or MATH 372) Students with credit for MATH 404 may not take STAT 430 for further credit.

STAT 440-3 Statistical Quality Control
Design and implementation of control charts and alternatives, process capability analysis, acceptance sampling procedures, system reliability models, hazard analysis, and related economic considerations. (3-1-0) Prerequisites: STAT 280 and 330 (or MATH 372)

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. (3-1-0) Prerequisite: STAT 350. Students with credit for MATH 472 may not take STAT 450 for further credit.

STAT 460-3 Decision Analysis and Bayesian Inference
Review of marginal and conditional distributions. Prior, posterior, and predictive distributions. Utilities, decision analysis under certainty, decision trees, backward induction. Bayesian estimation and hypothesis testing, comparison with classical methods. (3-1-0) Prerequisite: STAT 350. Students with credit for MATH 475 may not take STAT 460 for further credit.

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. (3-1-0) Prerequisites: dependent on the topic covered.

STAT 495-3 Directed Studies in Probability and Statistics
Independent reading or research on consultation with the supervising instructor. Prerequisites: written permission of the Department Undergraduate Studies Committee.

Biochemistry Program
Associated Faculty
D.L. Baillie Biological Sciences
A.T. Beckenbach Biological Sciences
C. Boone Biological Sciences
T.J. Borgford Chemistry
B.P. Brandhorst Biological Sciences
R.B. Cornell Chemistry
R.J. Cushley Chemistry
N.H. Haunerland Biological Sciences
B.M. Honda Biological Sciences
A.R. Kermode Biological Sciences
M.M. Moore Biological Sciences
J.V. Price Biological Sciences
W.R. Richards Chemistry  
J.K. Scott Chemistry  
D. Sen Chemistry  
M.J. Smith Biological Sciences  
G. Tibbits Kinesiology  

Advisor  
Dr. W.R. Richards, 6144 South Sciences Building, 778.782.4355

Major, minor and honors programs in Biochemistry are offered by the Faculty of Science. Entry into these programs requires the permission of the Program Advisor of the Biochemistry Curriculum Committee.

Students who entered the second or third year of Biochemistry in Fall 1994 or later should follow the program as set out below. Students farther along should refer to the 1992/93 Calendar for information on program requirements.

Undergraduate courses  
Course descriptions for all Biochemistry undergraduate courses.

Major Program  
(120 semester hours)

All Biochemistry students must complete the core program, together with elective courses chosen in consultation with Biochemistry's program advisor.

Core Program  
(90-91 semester hours)

BICH 221-3 Cell Biology and Biochemistry  
BICH 222-3 Molecular Biology and Biochemistry  
BICH 311-2 Analytical Biochemistry Laboratory  
BICH 312-2 Metabolism Laboratory  
BICH 321-3 Intermediary Metabolism  
BICH 322-3 Molecular Physiology  
BICH 403-3 Physical Biochemistry  
BICH 412-4 Enzymology  
BICH 413-2 Physical Biochemistry Laboratory  
BISC 101-4 Introduction to Biology  
BISC 102-4 Introduction to Biology  
BISC 202-3 Genetics  
BISC 331-3 Molecular Biology  
BISC 431-4 Molecular Biotechnology  
CHEM 102-3 General Chemistry I  
CHEM 103-3 General Chemistry II  
CHEM 115-2 General Chemistry Laboratory I  
CHEM 118-2 General Chemistry Laboratory II  
CHEM 150-3 Organic Chemistry I  
CHEM 155-2 Organic Chemistry Laboratory I  
CHEM 218-3 Introduction to Analytical Chemistry  
CHEM 250-3 Organic Chemistry II  
CHEM 255-2 Organic Chemistry Laboratory II  
CHEM 261-3 Physical Chemistry I  
CHEM 333-3 Inorganic Chemistry of Biological Processes

one of  
CMPT 101-4 Modula 2  
CMPT 102-3 Introduction to FORTRAN for Science Students  
CMPT 103-3 Introduction to PASCAL Programming
one of
MATH 151-3 Calculus I
* MATH 154-3 Calculus I for the Biological Sciences

one of
MATH 152-3 Calculus II
* MATH 155-3 Calculus II for the Biological Sciences

one of
MATH 310-3 Introduction to Ordinary Differential Equations
STAT 302-3 Analysis of Experimental and Observational Data

one of
PHYS 120-3 Modern Physics and Mechanics
PHYS 101-3 General Physics I

one of
PHYS 121-3 Optics, Electricity and Magnetism
PHYS 102-3 General Physics II

Recommended Courses
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III

*Note: Course alternatives marked with an asterisk are possible only for students who have transferred to Biochemistry from another program. Students who have declared (or intend to declare) a biochemistry major or honors program should not register for these alternative courses.

In addition to the core program, students majoring in Biochemistry must complete 30 semester hours of electives, at least 12 of which must be upper division credits (excluding EDUC 401 to 407). Nine semester hours must be taken in subjects outside the Faculty of Science, including a minimum of 6 hours from the Faculty of Arts. Further BSc general degree regulations are given in the Faculty of Science section.

Although many variations are possible, a student entering with BC High School Chemistry 12, Algebra 12 and Physics 12 (or equivalents) might take the following typical program.

Levels 1 and 2
BISC 101-4 and 102-4
CHEM 102-3, 115-2, 150-3 and 155-2
MATH 151-3, and 152-3
PHYS 120-3 and 121-3 Total 30 semester hours

Levels 3 and 4
BICH 221-3 and 222-3
BISC 202-3
CHEM 103-3, 118-2, 218-3, 250-3, and 255-2
CMPT 101-4 or 102-3 or 103-3
6 hours of electives - total 31-32 semester hours

Levels 5 and 6
BICH 311-2, 312-2, 321-3 and 322-3
BISC 331-3
CHEM 261-3
MATH 310-3 or STAT 302-3
9 hours of electives - total 28 semester hours
Levels 7 and 8
BICH 403-3, 412-4 and 413-2
BISC 431-4
CHEM 333-3
15 hours of electives - total 31 semester hours

Students entering without the equivalent of BC High School Chemistry 12 may not enter CHEM 102, but may begin with CHEM 101 and 106 and then follow a program similar to the above.

Honors Program
(132-133 semester hours)

In addition to the core courses shown above for the major program, students taking honors in Biochemistry must complete a further 42 semester hours, to include the following.

CHEM 357-3 Chemical and Instrumental Methods of Identification of Organic Compounds

one of
BICH 491-5 Undergraduate Research
BICH 493-15 Individual Study Semester

plus nine semester hours chosen from the following
BICH 421-3 Nucleic Acids
BICH 422-3 Biomembranes
BICH 423-3 Protein Structure and Function
BISC 402-3 Molecular Genetics
BISC 453-3 Advanced Developmental Biology
BISC 457-3 Plant Biochemistry and Molecular Biology
CHEM 450-3 Mechanistic Organic Chemistry
CHEM 411-3 Crystal Structure Analysis

or with permission of the undergraduate advisor
BICH 420-3 Selected Topics in Contemporary Biochemistry
BICH 490-3 Directed Study in Advanced Topics of Biochemistry
BISC 471-3 Special Topics in Biology
BISC 472-3 Special Topics in Biology
BISC 473-3 Special Topics in Biology

plus nine semester hours in courses outside the Faculty of Science (including six hours in the Faculty of Arts, but excluding EDUC 401 to 407), and sufficient upper division courses to bring the total number of upper division credit to at least 60 semester hours. Further BSc Honors requirements are given in the Faculty of Science section.

Minor Program
(64-66 semester hours minimum)

Lower Division Requirements
(50 semester hours minimum)

all of
BICH 221-3 Cell Biology and Biochemistry
BICH 222-3 Molecular Biology and Biochemistry
BISC 101-4 Introduction to Biology
BISC 102-4 Introduction to Biology
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II
CHEM 150-3 Organic Chemistry I
CHEM 155-2 Organic Chemistry Laboratory I
CHEM 218-3 Introduction to Analytical Chemistry
CHEM 250-3 Organic Chemistry II
CHEM 255-3 Organic Chemistry Laboratory II

one of
MATH 151-3 Calculus I
MATH 154-3 Calculus I for the Biological Sciences

one of
MATH 152-3 Calculus II
MATH 155-3 Calculus II for the Biological Sciences

one of
PHYS 101-3 General Physics I
PHYS 120-3 Modern Physics and Mechanics

one of
PHYS 102-3 General Physics II
PHYS 121-3 Optics, Electricity and Magnetism

Upper Division Courses
(15-17 semester hours)

BICH 311-2 Analytical Biochemistry Laboratory
BICH 312-2 Metabolism Laboratory
BICH 321-3 Intermediary Metabolism
BICH 322-3 Molecular Physiology

and at least two of
BICH 403-3 Physical Biochemistry (prerequisite CHEM 261)
BICH 412-4 Enzymology
BICH 413-2 Physical Biochemistry Laboratory
BICH 420-3 Selected Topics in Contemporary Biochemistry
BICH 421-3 Nucleic Acids
BICH 422-3 Biomembranes
BICH 423-3 Protein Structure and Function
BICH 490-3 Directed Study in Advanced Topics of Biochemistry
BISC 331-3 Molecular Biology

Kinesiology Electives

The student's attention is drawn to the following Biochemistry related courses offered by the School of Kinesiology in the Faculty of Applied Sciences. Any of these may be included in the 30 hours (or 42 for honors) of electives.

KIN 105-3 Fundamentals of Human Structure and Function
KIN 110-3 Current Topics in Human Nutrition
KIN 220-3 Human Foods and Nutrition
KIN 305-3 Human Physiology I
KIN 306-3 Human Physiology II (Principles of Physiological Regulation)
KIN 326-3 Functional Anatomy
KIN 336-3 Microscopic Anatomy (Histology)
KIN 402-4 Mechanical Properties of Tissues
KIN 407-3 Human Physiology Laboratory
KIN 430-3 Human Energy Metabolism
Co-operative Education Program

Biochemistry majors and honors may apply for admission to the Science Co-operative Education Program which includes four work semesters during the normal academic program. For details, refer to the Co-op Education section.

Biochemistry Undergraduate Courses

Faculty of Science

It is intended that Biochemistry major or honors students will take the Biochemistry courses in the order presented under the recommended program, and with the prescribed prerequisites. However, students in other major and honors programs may be admitted into any of these courses at the discretion of the Program Advisor of the Biochemistry Curriculum Committee.

BICH 221-3 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 courses. (Lecture) Prerequisites: BISC 101, 102, and either CHEM 103 or 150 (both CHEM 103 and 150 are recommended as prerequisites or corequisites). Students may not receive credit for both BICH 221 and BISC 201.

BICH 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. (Lecture) Prerequisites: BICH 221 (or BISC 201). CHEM 250 is a recommended prerequisite or corequisite.

BICH 311-2 Analytical Biochemistry Laboratory
The biochemical analysis of amino acids, peptides, carbohydrates, lipids, nucleotides, and nucleic acids. (0-0-4) Prerequisite: CHEM 255 (or 356), 218 and BICH 222. BICH 321 should be taken concurrently.

BICH 312-2 Metabolism Laboratory
Experiments demonstrating the major energy-yielding processes of metabolism and selected biosyntheses. (0-0-4) Prerequisite: CHEM 255 (or 356), 218 and BICH 321.

BICH 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. (Lecture) Prerequisites: BICH 222 and CHEM 250 (or 252). BICH 311 should be taken concurrently. Students may not receive credit for both BICH 321 and 302.

BICH 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. (Lecture) Prerequisites: BICH 222. BICH 321 (or BICH 301) is recommended.

BICH 403-3 Physical Biochemistry
The physical properties of biomacromolecules and their use in determining molecular weight and conformation; modern physical methods applied to biomolecules; properties and analysis of membrane systems. (3-1-0) Prerequisites: CHEM 261, BICH 321 (or BICH 301). BICH 413 should be taken concurrently.

BICH 412-4 Enzymology
Enzyme isolation and assay procedures: energy of activation; enzyme kinetics and inhibition; mechanisms of enzymic reactions; allosteric enzymes. (2-1-4) Prerequisites: BICH 321 (or BICH 301) and one of BICH 311 or 312.

BICH 413-2 Physical Biochemistry Laboratory
The measurement of physical properties of macromolecules; studies with bio-membranes. (0-0-4) Prerequisites: BICH 321 (or 301), 311 and 312. BICH 403 should be taken concurrently.
BICH 420-3 Selected Topics in Contemporary Biochemistry
The topics in this course will vary from semester to semester, depending on faculty availability and student interest. Prerequisite: permission of the Biochemistry Curriculum Committee. Usually, upper level standing (at least 60 semester hours) in a Faculty of Science degree program will be required.

BICH 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: BISC 321.

BICH 422-3 Biomembranes
A review of recent research on the structure, dynamics, function and biosynthesis of membranes, membrane lipids and proteins. (Lecture) Prerequisites: BICH 321 (or 301) and 322 (or 302). BICH 413 is recommended.

BICH 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. (Lecture) Prerequisites: BISC 321 and either BICH 321 (or 301) or BICH 322 (or 302).

BICH 490-3 Directed Study in Advanced Topics of
Biochemistry
Directed reading in a topic chosen in consultation with a supervisor. Prerequisite: permission of the Biochemistry Curriculum Committee. Usually, upper level standing (with at least 75 semester hours) in the Biochemistry program will be required.

BICH 491-5 Undergraduate Research
Laboratory research for preparation of a thesis for the honors degree in Biochemistry. Prerequisite: permission of the Biochemistry Curriculum Committee.

BICH 492-10 Individual Study Semester (Option A)
Laboratory research for preparation of a thesis for the honors degree in Biochemistry.

This course is available to students who have already taken BICH 491-5 or CHEM 481-5 or BISC 498-3 but would like additional research experience. It is also available to students who have not yet taken an undergraduate research course but wish to break an individual study project into two semesters. In this case, the student may take BICH 491-5 and 492-10 in either order in two succeeding semesters. If taken in the first semester, BICH 491-5 could thus be used for laboratory preparation; if taken following BICH 492-10, it could be used to complete the research phase and preparation of a research report. The nature of the project will in most cases determine the sequence, which must, however, be decided in advance of registration. No more than 15 hours of research courses may be counted. Prerequisite: permission of the Biochemistry Curriculum Committee. Criteria for approval: see BICH 493.

BICH 493-15 Individual Study Semester (Option B)
Laboratory research for preparation of a thesis for the honors degree in Biochemistry.

This course is available to students who have not yet taken an undergraduate research course and wish to complete an individual study project in one semester. Prerequisite: permission of the Biochemistry Curriculum Committee.

Criteria for approval of an individual study semester by the Biochemistry Curriculum Committee [BICH 492-10 (Option A) or BICH 493-15 (Option B)]: - Students wishing to pursue an individual study semester must obtain an agreement in writing from a Simon Fraser University faculty member who will serve as research supervisor. In addition, students must submit a detailed research proposal to the Biochemistry Curriculum Committee at least 4 weeks prior to the start of the proposed individual study semester.

- Students must have completed all of the required courses with 300 level numbers, or less, in the core program in Biochemistry, by the time of the proposed start of the project.
• Students must have obtained a GPA of 3.00 in all courses completed in the core program in Biochemistry at the time of application.
• Students may not receive credit for a total of more than 15 semester hours in research courses. Students may not take BICH 492-10 or 493-15 for credit if they have already completed either G.S. 499-15, or BISC 490-5, 491-5 and 492-5.

Upon approval of the student and the project, the Biochemistry Curriculum Committee will assign a supervisory committee consisting of the research supervisor and two other faculty members. At the end of the individual study semester, the student must submit a comprehensive research report to the supervisory committee, which may also require the student to present an oral defence. The supervisory committee will assign a final grade.

Department of Biological Sciences
Location: B8255 Shrum Science Centre
Telephone: 778.782.4475; 778.782.3496 Fax
Chair: (to be announced)

Professors Emeriti
B.P. Beirne BSc, MA, MSc, PhD (Dub), MRIA
T. Finlayson BA (Tor)
F.J.F. Fisher BSc, MSc (Cant), PhD (NZ)
A.L. Turnbull BSF, MF (Br Col), DPhil (Oxf)
W.E. Vidaver AB (San Francisco), PhD (Stan)

Professors
L.J. Albright BSc(Agr) (McG), MSc, PhD (Oregon State)
D.L. Bailie BSc, MSc (Br Col), PhD (Conn)
A.T. Beckenbach BSc (Florida Presbyterian), MSc (Flor), PhD (Calif)
J.H. Borden BSc (Wash State), MSc, PhD (Calif), RPF, RPE, FESC
B.P. Brandhorst AB (Harv), PhD (Calif)
F. Cooke BA, MA, PhD (Camb)
L.M. Dill BSc, MSc, PhD (Br Col)
L.D. Druehl BSc (Wash State), MSc (Wash), PhD (B Col)
A.P. Farrell BSc (Bath), PhD (Br Col)
F.C.P. Law BS, MS (Alta), PhD (Mich)
J.P.M. Mackauer DrPhilNat (Frankf), FESC
R.W. Mathewes BSc (S Fraser), PhD (Br Col)
B.A. McKeown BSc (Br Col), PhD (S Fraser)
J.E. Rahe BSA, PhD (Purdue)
B.D. Rotiberg BSc (S Fraser), MSc (Br Col), PhD (Mass)
M.J. Smith BSc (St Mary's, Calif), PhD (Br Col)
L.M. Srivastava BSc, MSc (Alld), PhD (Calif)
N.A.M. Verbeek BSc (Br Col), MSc (Montr), PhD (Calif)
J.M. Webster BSc, PhD, DSc (Lond), ARCS, DIC
M.L. Winston BA, MA (Boston), PhD (Kansas)

Associate Professors
F. Breden BA (S Florida), MS (Georgia), PhD (Chic)
R.C. Brooke BSF (Br Col), MF (Yale), PhD (Br Col)
A.H. Burr AB (Hamilton), PhD (Rockefeller)
P.V. Fankboner BS (Calif), MF (Yale), PhD (Vic, BC)
A.S. Harestad BSc, MSc, PhD (Br Col)
E.B. Hartwick BSc, MSc (Tor), PhD (Br Col)
N.H. Haunerland Dipl Biochem, PhD (MŸn)
B.M. Honda BSc (McM), PhD (Br Col)
C.L. Kemp BA, MSc (Br Col), PhD (Ill)
G.R. Lister BSc (Liv), PhD (S Fraser)
R.A. Nicholson BSc, PhD (Ston)
Z.K. Punja BSc (Br Col), MS, PhD (Calif)
R.C. Ydenberg BSc (S Fraser), DPhil (Oxf)
Assistant Professors
G.S. Anderson BSc (Man), MSc, PhD (S Fraser)
L.I. Bendell-Young BSc, PhD (Tor)
C.M. Boone BSc (Qu), PhD (McG)
E.G. Cooch BSc (St. Lawrence), PhD (Qu)
B.J. Crespi BSc (Chic), PhD (Mich)
K.R. Delaney BSc (Br Col), MA, PhD (Prin)
G.J. Gries PhD (G August, Gottingen, Germany)
I.L. Jones BSc (Car), MSc (Tor), PhD (Qu)
C.J. Kennedy BSc, PhD (S Fraser)
A.R. Kermode BSc, PhD (Calg)
D.B. Lank BA (Marlboro), MS (Minn), PhD (C'nell)*
L.F.W. Lesack BSc (Man), PhD (Calif)*
M.M. Moore BSc, PhD (Br Col)
A.L. Plant BSc, PhD (Nott)
J.V. Price BA (San Diego), PhD (Colorado)
T.D. Williams BSc (Exe), PhD (Brist)

Adjunct Professors
N.P.D. Angerilli BSc, PhD (S. Fraser)
R.W. Baron BSc, MSc (Manit), PhD (McG)
P. Belton BSc (Lond), PhD (Glas), ARCS
W.D. Binder BSc, MSc (Vic, BC), PhD (Oregon State)
J.R. Byers BSA, MSc, PhD (Sask)
H.L. Ching BA, MSc (Oregon State), PhD (Neb)
R.H. Devlin BSc, PhD (Br Col)
K.C. Eastwell BSc, PhD (Alta)
T.P.T. Evelyn BSA, MSA (TOR), PhD (Br Col)
W.G. Friend BSc (McG), PhD (C'nell)
M.S. Graham BSc (Guelph), PhD (Nfld)
G.J.R. Judd BSc, MPM, PhD (S Fraser)
Z. Kabata BSc, MSc, PhD (Aberdeen)
E. Kafer Dip, DPhil (Zur)
K.K. Klein DipAg, BSA, MSc (Sask), PhD (Purdue)
V.P. Lipovsky BS (Finlay, Ohio), MSc, PhD (Wash)
H.R. MacCarthy BA (Br Col), PhD (Calif)
L. Margolis BSc, MSc, PhD (McG)
K. Martin BSc (PEI), MSc (Alta), PhD (Qu)
R.S. Utkhede BSc, MSc (Nag), PhD (IARI)
R.S. Vernon BSc, MPM, PhD (S Fraser)
T.C. Vrain DUES, MSc (Univ de Caen), PhD (N Carolina State)
I.R. Walker BSc (Mt Alison), MSc (Wat), PhD (S Fraser)

Associated Faculty
C.B. Crawford; Psychology
B.M.F. Galdikas; Archaeology
M. McClaren; Education
R.M. Peterman; Resource and Environmental Management
R.D. Routledge; Mathematics
G. Tibbits; Kinesiology
H. Weinberg; Psychology

Laboratory Instructors
M. Fernando BSc (Sri Lanka), MSc, PhD (Br Col)
N. McGregor BSc (Qu), MSc (Calg)
T. McMullan BSc, MPM (S Fraser)
J. Sharp BA, BSc (McG), MSc (Br Col)
C. Thong BSc (Singapore), PhD (S Fraser)
D.R. Wilson BSc, MSc (S Fraser)
* joint appointment with Geography

**Advisor**
Mr. B. Medford, B8270 Shrum Science Centre, 778.782.3551

Programs are offered in Biological Sciences, major, honors, minor; Environmental Toxicology, minor, Post Baccalaureate Diploma; Co-operative Education is available to students in the major and honors programs.

**Academic Advising**
Biological Sciences majors should contact an advisor before registration.

Those in a pre-profession program (e.g., pre-medicine, pre-veterinary medicine, pre-dentistry, etc.) should advise the department and an advisor familiar with the requirements of the proposed professional program will be assigned.

**Undergraduate courses**
Course descriptions for all Biological Sciences undergraduate courses.

**Major Program**
Basic credit hour requirements underlying all areas of emphasis are as follows.

- BISC/BICH (lower division) 20 semester hours
- Non BISC/BICH (lower division) 30 semester hours
- BISC/BICH (upper division) 40 semester hours
- *Electives 30 semester hours
- Total (minimum) 120 semester hours

*Electives must include a minimum of 12 semester hours in subjects taken outside the Faculty of Science (excluding EDUC 401, 402, 405, and 406). A minimum of 6 of these semester hours must be from the Faculty of Arts. A minimum of 44 semester hours of upper division must be included in the program.

Six semester hours of English should be completed by all major/honor students in Biological Sciences.

**Lower Division Core**
Normally all Biological Sciences majors are must complete the following, or their equivalents, within the first 60 hours (four semesters) of their programs.

Courses in the Faculty of Science

- **all of**
  - BICH 221-3 Cell Biology and Biochemistry
  - BICH 222-3 Molecular Biology and Biochemistry
  - BISC 101-4 Introduction to Biology
  - BISC 102-4 Introduction to Biology
  - BISC 202-3 Genetics
  - BISC 204-3 Introduction to Ecology
  - CHEM 102-3 General Chemistry I
  - CHEM 115-2 General Chemistry Laboratory I
  - STAT 301-3 Statistics for the Life Sciences

  plus a minimum of 10 semester hours selected from the following
  - CHEM 103-3 General Chemistry II
  - CHEM 118-2 General Chemistry Laboratory II
  - CHEM 150-3 Organic Chemistry I
  - CHEM 155-2 Organic Chemistry Laboratory I
  - CHEM 250-3 Organic Chemistry II
  - CHEM 255-2 Organic Chemistry Laboratory II
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 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

50 Lower Division Total

Students are encouraged to take a full year of organic chemistry. Those intending to apply for medical, dental or veterinary school should include all of the Chemistry courses listed above. See Requirements for Students Wishing to Transfer into Professional Schools in the Faculty of Science section.

Upper Division Requirements and Electives
All Biological Sciences majors will complete a minimum of 13 upper division (courses numbered 300 or above) BISC courses. The following six courses form an upper division core required of all BISC major/honors students.

one of
BICH 322-3 Molecular Physiology
BICH 321-3 Intermediary Metabolism

one of
BISC 305-3 Animal Physiology
BISC 366-3 Plant Ecophysiology

one of
BISC 306-3 Invertebrate Biology
BISC 316-3 Vertebrate Biology

one of
BISC 326-3 Biology of Non-Vascular Plants
BISC 337-3 Comparative Morphology, Distribution and Evolution of Vascular Plants

all of
BISC 333-3 Developmental Biology
BISC 329-4 Introduction to Experimental Techniques
BISC 400-3 Evolution

The remaining six* upper division BISC courses may be chosen to form an area of concentration consistent with student interests and career goals. The department offers course concentration in the following areas.

botany
ecology
genetics, cell and molecular biology
environmental toxicology
marine science
pest biology and management
Students should consult the departmental advisor and/or the advising lists available in the Biological Sciences Department.

*Students may substitute a maximum of two courses from among BICH 321, 322, 421, 422 and 423, GEOG 315, 415 and 419, KIN 305, 306, 326, 336 and 431 to satisfy this requirement.

**Typical Lower Division Core Program**
Although there are many variations, the following is a typical program for the first four semesters.

**Level 1**
- BISC 102-4 Introduction to Biology
- CHEM 102-3 General Chemistry I
- CHEM 115-2 General Chemistry Laboratory I
- MATH 154-3 Calculus I for the Biological Sciences
- Elective

**Level 2**
- BISC 101-4 Introduction to Biology
- CHEM 150-3 Organic Chemistry I (or 103)
- CHEM 155-2 Organic Chemistry Laboratory I (or 118)
- MATH 155-3 Calculus II for the Biological Sciences
- PHYS 101-3 General Physics I

**Level 3**
- BICH 221-3 Cell Biology and Biochemistry
- CHEM 250-3 Organic Chemistry II (or 150)
- CHEM 255-2 Organic Chemistry Laboratory II (or 155)
- PHYS 102-3 General Physics II

_and one of_
- BISC 202-3 Genetics
- BISC 204-3 Introduction to Ecology

**Level 4**
- BICH 222-3 Molecular Biology and Biochemistry
- STAT 301-3 Statistics for the Life Sciences (or 102)

_and one of_
- BISC 202-3 Genetics
- BISC 204-3 Introduction to Ecology

**Note:** Biological Sciences majors are normally complete the Chemistry, Mathematics and Physics requirements as well as the lower division Biological Sciences courses within the first 60 semester hours (four semesters).

**Honors Program**
This program is for Biology students who wish to pursue an advanced degree. It requires a minimum of 60 semester hours of upper division Biological Sciences courses, or related subjects, which is selected for each student, in consultation with appropriate advisors, in relation to career goals.

Departmental approval is required for entry into the honors program. Students must have completed 30 semester hours at Simon Fraser University in a major program in Biological Sciences. Applications received after more than 90 semester hours have been completed will not normally be considered.
The BSc honors degree in Biological Sciences requires the following.

- maintenance of a minimum of 3.00 CGPA
- completion of 60 hours of upper division Biological Sciences or related subjects, which will include the core courses required for the major plus BISC 490, 491 and 492, these latter to constitute the honors thesis, and
- completion of appropriate electives to achieve a final total of at least 132 semester hours, including at least 12 semester hours from courses outside the Faculty of Science (including a minimum of 6 semester hours from the Faculty of Arts and excluding EDUC 401, 402, 405, 406).

**Minor Program**
Students taking a minor are required to obtain the following credits or standing in the subjects shown to fulfill the requirements for the BSc degree.

- BISC 101-4 Introduction to Biology
- BISC 102-4 Introduction to Biology

at least two of
- BISC 204-3 Introduction to Ecology
- BICH 221-3 Cell Biology and Biochemistry
- BICH 222-3 Molecular Biology and Biochemistry

plus any 15 upper division Biological Sciences hours, or closely related subject areas (including Marine Sciences courses), as approved by the department.

**Co-operative Education Program**
Majors and honors students in Biological Sciences may apply for admission into the Co-operative Education program. The program includes four work semesters during the normal academic program. Interested students should contact the Science Co-op Co-ordinators in Academic Quadrangle 5003, telephone 778.782.4716, for further information.

**Environmental Toxicology Minor Program**
This program gives undergraduates working towards a sciences degree a thorough overview of environmental toxicology. Consequently, students 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 degree programs in science, will already have credit for most of these courses.

all of
- BICH 221-3 Cellular Biology and Biochemistry
- BISC 101-4 Introduction to Biology
- BISC 102-4 Introduction to Biology
- CHEM 102-3 General Chemistry I
- CHEM 103-3 General Chemistry II
- CHEM 115-2 General Chemistry Laboratory I
- CHEM 118-2 General Chemistry Laboratory II
- CHEM 150-3 Organic Chemistry I
- CHEM 155-2 Organic Chemistry Laboratory I
- CHEM 250-3 Organic Chemistry II
- CHEM 255-2 Organic Chemistry Laboratory II

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 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

Upper Division Requirements
BISC 312-3 Environmental Toxicology I
BISC 313-3 Environmental Toxicology II
BISC 432-3 Chemical Pesticides and the Environment
STAT 301-3 Statistics for the Life Sciences

plus two of
BISC 445-3 Environmental Physiology of Animals (prerequisite is BISC 305-3)
CHEM 371-3 Chemistry of the Aqueous Environment (prerequisites are CHEM 150 (or 251) and 261)
GEOG 419-4 Mass Transfer in the Biosphere
KIN 431-3 Environmental Carcinogenesis

and their prerequisites as noted in the Undergraduate Courses.

Since upper division credit may not count to fulfill credit hours for more than one program, some substitutions may be required. Appropriate course selection for substitutions would be as follows.

BICH 412-4 Enzymology
BISC 366-3 Plant Ecophysiology
BISC 405-3 Cell Physiology
KIN 305-3 Human Physiology I
KIN 306-3 Human Physiology II (Principles of Physiological Regulation)

It is advised that students wishing to pursue a minor in Environmental Toxicology contact the Department of Biological Sciences as soon as possible.

A GPA of 2.00 or higher, is required for the courses in the minor program.

Post Baccalaureate Diploma Programs

Biological Sciences
Post Baccalaureate Diploma programs are available in various areas of Biological Sciences for students who have already completed a degree (usually) in science and who wish to upgrade their academic credentials.

Note: course descriptions for the 600 and 800 level courses are given in the Biological Sciences section of Graduate Studies in this Calendar.

For information about Post Baccalaureate Diploma programs in Biology, contact the Department of Biological Sciences.

Environmental Toxicology
This program specifically meet the needs of students with science degrees who are presently engaged in environmental work and seek to upgrade their training. Practical experience in recent laboratory assay techniques will enable students to critically evaluate the data generated by these techniques.
Program Requirements

all of
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
CHEM 371-3 Chemistry of the Aqueous Environment
GEOG 419-4 Mass Transfer in the Biosphere
KIN 431-3 Environmental Carcinogenesis

plus one of
BISC 429-3 Environmental Techniques I: Separation Methods
BISC 449-3 Experimental Techniques III: Histochemistry
CHEM 316-3 Introductory Instrumental Analysis
CHEM 357-3 Chemical and Instrumental Methods of Identification of Organic Compounds
KIN 336-3 Microscopic Anatomy (Histology)

plus all of
BISC 650-3 Industrial Toxicology
BISC 651-3 Food and Drug Toxicology
BISC 652-3 Problem Analysis in Environmental Toxicology
BISC 846-3 Insecticide Chemistry and Toxicology

and their prerequisites as noted in the Undergraduate Courses. If any of the above requirements (except prerequisites) have been used to fulfill requirements for another degree, additional electives in the area of specialization will be required. Please consult the department of Biological Sciences.

Aquaculture

This program is for those students with science degrees who wish to obtain specialized training in Aquaculture. Specific prerequisites for entry into the Post Baccalaureate Diploma in Aquaculture are as follows.

BISC 303-3 Microbiology
BISC 306-3 Invertebrate Biology
BISC 326-3 Biology of Non-Vascular Plants
BISC 416-3 Fish Biology (or equivalent)

Requirements
BISC 630-5 Introduction to Aquaculture Systems
BISC 631-5 Growth, Reproduction and Nutrition in Aquaculture Systems
BISC 632-5 Salmonid Fish Diseases and Their Control
BISC 633-1 Current Topics in Aquaculture
BUS 543-4 Introductory Graduate Marketing
ECON 663-4 The Economics and Management of Aquaculture
MRM 615-3 Management of Aquaculture Resources
Elective

Note: These, like other University diploma programs, are classified as undergraduate programs. Some courses listed above are available for credit to both Biological Sciences graduate and undergraduates. Course descriptions for the 600 level courses are in Biological Sciences Graduate Studies section.
**Marine Science**

Programs in Marine Science may include both BISC and MASC courses to fulfill the upper division requirements in Biological Sciences. MASC courses are offered at the Bamfield Marine Station, Bamfield, BC in conjunction with certain other universities from May to August inclusive in 3 or 6 week blocks. Consult the Department of Biological Sciences in January for the course offerings scheduled for the summer and for their use as substitutes for upper division BISC courses in major, minor or honors programs.

Entry to courses requires application through the Department of Biological Sciences, well in advance of commencement of the courses, as selection of candidates will be across several universities and enrollments are limited.

For information concerning application for entry, fees, and related matters, consult the Department of Biological Sciences. To take Marine Science courses, students must apply for admission to the university through the usual procedures, and be accepted. See the Admission and Readmission section.

From time to time graduate level courses will be offered. For details see the graduate section of Biological Sciences.

**Undergraduate courses (file not available)**

Course descriptions for all Marine Science undergraduate courses.

**Students from other Departments**

Certain courses may be taken by those not enrolled in Biological Sciences programs: BISC 003, 004, 100, 101, 102, 105. Admission to certain other courses may be gained by permission of the department.

**Other Programs**

**Biochemistry**

A major program, honors program and minor program are offered jointly with the Department of Chemistry and the School of Kinesiology. Entry requires the permission of the Biochemistry Curriculum Committee of the Faculty.

For details about these programs, see the Biochemistry section.

**Biological Sciences Undergraduate courses**

**Faculty of Science**

See also courses listed under Marine Science (MASC).

Note: Entry into courses numbered 300 and above requires completion of the lower division core in Biological Sciences (see Lower Division Core in the Biological Sciences section of the Calendar). Prerequisites for any course may be waived with the approval of the department.

**BISC 003-3 Ecology and the Population Explosion**

The demographic and the ecological bases of the population explosion; its biological, economic, and sociological implications; possible solutions and limitations; and its consequences for the future of mankind. (3-1-0) Prerequisite: open to all students.

**BISC 004-3 Apiculture: An Introduction to Bees and Beekeeping**

The course will stress the biology of bees as well as management for honey production, and will provide the necessary information required to begin beekeeping. Lecture topics will include basic honeybee biology, beekeeping equipment, seasonal management, and disease prevention. (3-0-1) Prerequisite: open to all students.

**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. (Lecture/Laboratory) Students with credit for BISC 101 or a succeeding Biology course may not take BISC 100 for further credit. Students with credit for Biology 12 normally will not be permitted to take this course for credit.
BISC 101-4 General Biology
This course offers 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. (2-1-4) Prerequisites: high school Biology 12 (or equivalent) or BISC 100.

Note: BISC 101 and 102 need not be taken in any particular sequence, and may also be taken concurrently.

BISC 102-4 General Biology
The course begins by surveying 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. The principles of behavior and ecological relationships or organisms to each other and their environment are also studied. (2-1-4) Prerequisites: high school Biology 12 (or equivalent) or BISC 100.

Note: BISC 101 and 102 need not be taken in any particular sequence, and may also be taken concurrently.

BISC 105-3 Biology and the Human Species
Principles and processes of general biology with emphasis on implications for the human species of: evolutionary processes; reproduction and inheritance; physiology, behavior and ecology. (3-2-0) Prerequisite: open to all students.

BISC 202-3 Genetics
Principles and concepts of the transmission of genetic information treated comparatively in man, animal, plant and microbe. (3-1-0) Prerequisites: 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. (3-1-0) Prerequisites: BISC 101 and 102. Credit will not be granted for both BISC 204 and GEOG 215.

Entry into the following courses normally requires completion of the lower division core for Biological Sciences, or permission of the Department.

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 Course Timetable and Registration Instructions.

BISC 302-3 Genetic Analysis
Discussion and manipulations of some of the organisms and techniques applicable to genetic analysis. (2-0-4) Prerequisite: BISC 202.

BISC 303-3 Microbiology
The biology of micro-organisms and their significance in the understanding of cellular processes. (2-0-4) Prerequisite: BISC 101, 102 and BICH 221.

BISC 304-3 Animal Ecology
A study of the interrelationships of animals and their physical and biotic environment. (3-1-0) Prerequisite: BISC 204

BISC 305-3 Animal Physiology
A comparative study of basic physiological mechanisms in invertebrates and vertebrates. (3-0-4) Prerequisite: BICH 221.

BISC 306-3 Invertebrate Biology
An introduction to the selected invertebrate phyla with emphasis on functional morphology, diversity and ecology. Normally, a compulsory weekend field trip to a marine station is required with this offering. (3-0-3) Prerequisite: BISC 204.
BISC 310-3 The Plants and Animals of British Columbia
An introduction to the plants and animals of British Columbia with emphasis on their ecology, distribution, and general characteristics. Consideration of trees, flowering plants, mammals, birds, and some of the more common non-vascular plants (mushrooms, algae and mosses). These organisms will be examined as they are found in the various biotic regions of the province of British Columbia. A field trip of one to four days normally is a required part of the course. (3-0-4) Prerequisite: 75 semester hours of credit including BISC 101 and 102.

BISC 312-3 Environmental Toxicology I
A introductory course in environmental toxicology which will concentrate on the biologist's perspective and will "bridge the gap" between traditional biology courses and formal toxicology courses. The course is required for a minor and Extended Studies Diploma Program in Environmental Toxicology. (3-1-0) Prerequisite: BISC 101 and 102.

BISC 313-3 Environmental Toxicology II
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. (3-1-0) Prerequisites: BICH 221. Corequisite: BISC 312. Students with credit for BISC 311-3 will not receive credit for BISC 313-3.

BISC 316-3 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. (3-0-4) 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. (2-0-4) Prerequisite: BISC 101 and 102.

BISC 326-3 Biology of Non-Vascular Plants
A survey of form, function and phenetics. (2-0-4) Prerequisite: BISC 101 and 102. Note: There are compulsory weekend field trips.

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. (2-0-8) Prerequisites: BICH 221 and PHYS 102.

BISC 331-3 Molecular Biology
The study of gene structure and evolution, DNA replication, and the regulation of gene expression in bacteria and higher organisms. (3-1-0) Prerequisites: BICH 222, BISC 202. Students with credit for BISC 321 may not take this course for credit.

BISC 333-3 Developmental Biology
Classical and modern experimental approaches will be described for understanding the development of the embryos of several species having common and distinctive features. These approaches are at the organismal, cellular, molecular and genetic levels. Prerequisites: BISC 202, BICH 222. Students with credit for BISC 203 may not complete BISC 333 for further credit.

BISC 337-3 Comparative Morphology, Distribution and Evolution of Vascular Plants
Geologic history, distribution, comparative morphology and evolution of vascular plants. (3-0-4) Prerequisite: BISC 101 and 102.

BISC 341-0 Practicum I
First semester of work experience in the Biological Sciences Co-operative Education Program. Prerequisite: acceptance in the Biological Sciences Co-operative Education Program.

BISC 342-0 Practicum II
Second semester of work experience in the Biological Sciences Co-operative Education Program. Prerequisite: BISC 341.
BISC 356-3 Hormonal Regulation of Plant Growth
Interaction of internal regulatory mechanisms and environmental factors in plant morphogenesis; anatomy-cell differentiation, development and growth of vegetative and reproductive organs. (3-0-4) Prerequisites: BICH 222 (or BISC 201), CHEM 150 (or 251) and 155 (or 256).

BISC 366-3 Plant Ecophysiology
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. (3-0-4) Prerequisites: BICH 222 (or BISC 201), CHEM 150 (or 251) and 155 (or 256).

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 Course Timetable and Registration Instructions.

BISC 400-3 Evolution
The comparative biology of change mechanisms in living systems. The origin of life, major evolutionary trends in geological time, and the comparison of adaptive processes at species, population and individual levels. Man's origin and the special biological significance of human adaptive capacities. (3-1-0) Prerequisite: 75 semester hours of credit including BISC 101 and 102.

BISC 402-3 Molecular Genetics
Advanced problems concerning the nature and function of genetic material. (3-1-0) Prerequisites: BISC 302 and BISC 331.

BISC 404-3 Plant Ecology
Quantitative and qualitative aspects of the distribution, dynamics and ecology of terrestrial plants. A field trip of one to four days normally is a required part of the course. (2-0-4) Prerequisite: BISC 204 and 75 semester hours.

BISC 405-3 Cell Physiology
The physiology of cells with emphasis on the physical and chemical nature of specialized activities. (2-0-4) Prerequisite: BISC 305 or KIN 205.

BISC 406-3 Marine Biology and Oceanography
An introduction to the marine environment, marine organisms and the ecological and oceanographic processes affecting them. (2-0-4) Prerequisite: BISC 306 or 316.

BISC 407-3 Population Dynamics
An evaluation of factors influencing the natural fluctuation of regulation of animal population numbers. (3-1-0) Corequisite: BISC 304.

BISC 410-3 Ethology
Animal behavior with emphasis on its causation and evolution, and its adaptiveness in various ecological contexts. (3-1-0) Corequisite: BISC 304 or permission of the department.

BISC 414-3 Limnology
Biological, chemical and physical features of lakes and other inland waters. Particular attention will be directed to an examination of lakes in Western Canada and the impact of human activities on them. Local field trips form part of the laboratory work. (2-0-4) Prerequisite: 75 semester hours of credit.

BISC 415-3 Ornithology
An introduction to the biology of birds, with an emphasis on their reproduction, morphology, behavior, and ecology. (2-0-4) Prerequisite: BISC 304 or 316.

BISC 416-3 Fish Biology
An introduction to the biology of fishes with an emphasis on classification, evolution, anatomy, physiology, and ecology. (3-0-4) Prerequisite: BISC 316 or permission of the department.
### BISC 417-3 Entomology
Analysis of the biological characteristics which enable insects to be successful organisms in nature as well as highly successful pests. Particular emphasis on characteristics which render insects vulnerable to various types of pest management. Laboratory includes recognition of insect pests and project work on selected types of problems encountered by professional entomologists. (2-0-3) Prerequisite: BISC 317.

### 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. (2-0-4) Prerequisite: BISC 304. BISC 316 recommended.

### 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. (3-1-0) Prerequisites: BISC 202 and STAT 301.

### BISC 427-3 Biology of the Bees
Introduction to the biology of bees, emphasizing the evolution of social behavior and the morphological, physiological, behavioral, and ecological mechanisms which are involved in apoid sociality. (2-0-4) Prerequisite: BISC 317 and 75 semester hours.

### BISC 429-3 Experimental Techniques I: Separation Methods
Theory and practice of analytical and preparative separation methods in biology. (1-1-6) Prerequisite: BISC 329.

### BISC 430-3 Plant Pathology
Fungi, bacteria, viruses, nematodes, parasitic higher plants and insect vectors as agents of plant disease will be considered. Etiology and ecology of host-parasite relationships will be emphasized via examination of selected economically and/or aesthetically important plant diseases. (3-0-4) Prerequisite: BISC 326 or 337.

### BISC 431-4 Molecular Biotechnology
Laboratory with accompanying lectures to give practical experience in the application of recombinant DNA technology to basic and applied research. (3-0-6) Prerequisite: BISC 331. Recommended BICH 322 (or 302) and/or BISC 402 concurrently.

### 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. (3-1-0) Prerequisite: BICH 321 or 322 (or BICH 301 and 302 or BISC 301). Note: This course is strongly 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. (2-0-4) Prerequisites: Minimum 60 credit hours 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. (3-0-0) Prerequisite: BISC 317, or 75 semester hours of credit.

### BISC 443-0 Practicum III
Third semester of work experience in the Biological Sciences Co-operative Education Program. Prerequisite: BISC 342.

### BISC 444-0 Practicum IV
Fourth semester of work experience in the Biological Sciences Co-operative Education Program. Prerequisite: BISC 443.
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. (3-1-0) Prerequisite: BISC 305.

BISC 446-0 Practicum V
Fifth semester of work experience in the Biological Sciences Co-operative Education Program. Prerequisites: BISC 444-0

BISC 449-3 Experimental Techniques III: Histochemistry

BISC 453-3 Advanced Developmental Biology
Intensive examination of the recent research literature in modern molecular studies of the development and differentiation of animal systems. Emphasis will be on molecular mechanism which underlie basic development phenomena. (3-0-0) Prerequisites: BISC 333 (or BISC 203) and BISC 331.

BISC 455-3 Endocrinology
A study of endocrine organs and their role in integrating physiological functions in animals. (3-1-0) Prerequisites: 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 and applications of plant genetic engineering. (3-0-4) Prerequisites: BISC 331, or permission of the department.

BISC 471-3 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 Registration Instructions.

BISC 472-3 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 Registration Instructions.

BISC 473-3 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 Registration Instructions.

BISC 490-5 Research Design
Corequisite: BISC 491 and 492.

BISC 491-5 Research Technique
Corequisite: BISC 490 and 492.

BISC 492-5 Research Reporting
Corequisite: BISC 490 and 491.

The above three courses must be pursued as components of an Individual Study Semester (ISS). They are required for students in the honors program and must be taken concurrently under the guidance of a sponsoring faculty member who will chair a three-member supervisory committee. Students wishing to take BISC 490, 491, and 492 must apply for admission by submitting a research proposal to the Departmental Undergraduate Curriculum Committee at least three months prior to the semester in which the courses will be taken.

Prerequisites: - 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 - Completion of all Physics, Chemistry and Mathematics requirements for the major or honors program. - At the time of application, a minimum GPA of 2.76 and a minimum cumulative GPA in Biological Sciences of 3.00.
BISC 498-3 Undergraduate Research

Prerequisite: 90 semester hours. A student will be permitted to enroll in this course only if he/she obtains the prior written agreement of a professor to act as research advisor.

Chemical Physics Program

Advisors
Dr. E.D. Crozier, P9418 Shrum Science Centre, 778.782.4827
Dr. L.H. Palmer, P8433 Shrum Science Centre, 778.782.4844

An honors program and a major program in Chemical Physics are offered jointly by the Departments of Chemistry and Physics. Entry requires the permission of both departments. Computing skills such as those in CMPT 102 are expected of students entering second year Physics courses. Graduates from the honors program may do graduate work in either Chemistry or Physics.

Undergraduate courses
Information on CHEM and PHYS undergraduate courses.

Major Program

Lower Division Requirements
(total 53-54 semester hours)

*all of*
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 218-3 Introduction to Analytical Chemistry (e)
CHEM 232-3 The Chemistry of Nontransition Elements
CHEM 150-3 Organic Chemistry I
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III
MATH 252-3 Vector Calculus
PHYS 120-3 Modern Physics and Mechanics
PHYS 121-3 Optics, Electricity and Magnetism
PHYS 131-2 General Physics Laboratory B
PHYS 211-3 Intermediate Mechanics
PHYS 221-3 Intermediate Electricity and Magnetism
PHYS 233-2 Introductory Physics Laboratory A

*and one of*
CHEM 250-3 Organic Chemistry II
CHEM 155-2 Organic Chemistry Laboratory I

*and one of*
CHEM 261-3 Physical Chemistry I
PHYS 244-3 Thermal Physics

Upper Division Requirements
(total 38-39 semester hours)

*all of*
CHEM 316-3 Introductory Instrumental Analysis
CHEM 331-3 Practical Aspects of Inorganic Chemistry(f)
CHEM 367-2 Physical Chemistry Laboratory II(a)
CHEM 462-3 Molecular Spectroscopy
MATH 310-3 Introduction to Ordinary Differential Equations
NUSC 341-3 Introduction to Radiochemistry
PHYS 326-3 Electronics and Instrumentation
PHYS 331-3 Electronics Laboratory

and one of
CHEM 361-3 Physical Chemistry II
PHYS 385-3 Quantum Physics

and one of
PHYS 324-3 Electromagnetics
PHYS 325-3 Relativity and Electromagnetism

and one of
CHEM 362-3 Physical Chemistry III(c)
PHYS 345-3 Statistical Physics

and one of
PHYS 455-3 Laser Physics
PHYS 465-3 Solid State Physics(d)

and at least one of
PHYS 332-3 Intermediate Laboratory(b)
PHYS 355-3 Optics
PHYS 431-4 Advanced Physics Laboratory I

Additional courses must be taken to give a total of at least 44 semester hours of credit at the upper division (i.e. numbered 300 or above) and a total of at least 120 semester hours of credit overall. Of these, 12 semester hours must be taken outside the Faculty of Science (excluding EDUC 401 to 407) including 6 hours from the Faculty of Arts. (See Faculty of Science requirements).

**Honors Program**

**Lower Division Requirements**
(total 56 semester hours)

Requirements are the same as for the major program except that both CHEM 250 and 155 are required. CHEM 261 will be needed for certain options.

**Upper Division Requirements**
(total 46-47 semester hours)

all of
CHEM 331-3 Practical Aspects of Inorganic Chemistry (f)
CHEM 367-2 Physical Chemistry Laboratory II(a)
CHEM 462-3 Molecular Spectroscopy
MATH 310-3 Introduction to Ordinary Differential Equations
MATH 326-3 Electronics and Instrumentation
PHYS 331-3 Electronics Laboratory
PHYS 384-3 Methods of Theoretical Physics I
PHYS 415-3 Quantum Mechanics(d)
PHYS 465-3 Solid State Physics(d)

plus one of
CHEM 361-3 Physical Chemistry II
PHYS 385-3 Quantum Physics
plus one of
MATH 332-3 Intermediate Laboratory(b)
MATH 355-3 Optics

plus one of
CHEM 362-3 Physical Chemistry III(c)
PHYS 345-3 Statistical Physics

plus one of
PHYS 324-3 Electromagnetics
PHYS 325-3 Relativity and Electromagnetism
PHYS 431-4 Advanced Physics Laboratory I

plus five elective hours from upper division Chemistry or Nuclear Science

plus three semester hours of upper division Physics or Nuclear Science electives other than PHYS 385.

Additional courses must be taken to give a total of at least 60 semester hours at the upper division (i.e. numbered 300 or above) and a total of at least 132 semester hours of credit overall. Of these, 12 semester hours must be taken outside the Faculty of Science, but (excluding EDUC 401 to 407) including six hours from the Faculty of Arts. (See Faculty of Science requirements).

Notes for Major and Honors Programs
a) CHEM 367 - the prerequisite CHEM 366 may be waived provided that PHYS 131, 233, and 331 have already been taken.

b) PHYS 332 - the requirement that PHYS 355 must precede, or be taken concurrently with PHYS 332, may be waived with the permission of the department.

c) PHYS 345 - the requirement of PHYS 244 as prerequisite may be waived with permission of the department if CHEM 261 has already been taken. The recommended prerequisite PHYS 385 may be substituted with CHEM 361.

d) PHYS 415 - and PHYS 465 - the requirement of PHYS 385 as prerequisite may be waived with permission of the department if CHEM 361 has already been taken.

e) CHEM 218 - The prerequisite CHEM 118 may be waived provided that CHEM 115 has already been taken.

f) CHEM 331 - The prerequisite CHEM 118 may be waived. CHEM 218 is required and may be taken concurrently.

Co-operative Education Program
Co-operative Education is a system which combines work experience with academic studies. The student spends alternate semesters on campus and in study related jobs.

Students interested in this program, should refer to the Department of Chemistry or Department of Physics sections.

Chemistry Undergraduate Courses

Faculty of Science
See also courses listed under Nuclear Science (NUSC).

Students are not normally permitted to register in Chemistry courses for which a grade of D was obtained in any prerequisite.

CHEM 003-3 Chemistry, Technology and Society
Truth in science; nuclear warfare and nuclear power; drugs and the drug industry; automation; role of the universities, government and industry in science; national and international science policy. (2-1-0) Prerequisite: This course has no prerequisites and is available as an elective for students from any Faculty.
CHEM 004-3 Pollution, Energy and Resources
Chemistry of the environment, energy sources and the energy 'crisis', pollution, resources and agriculture, limits to growth. (2-1-0) Prerequisite: This course has no prerequisites and is available as an elective for students from any Faculty.

CHEM 101-3 Introductory Chemistry
General fundamental concepts and nomenclature; stoichiometry and chemical calculations; nuclear and atomic structures, the periodic table, the chemical bond; the properties of gases, liquids, solids and solutions; chemical kinetics and chemical equilibrium. (3-1-0) Prerequisites: BC High School Mathematics12 (or equivalent) (or MATH 100, corequisite) or permission of the department. No previous training in Chemistry is required for this course. CHEM 106 should be taken concurrently by students intending to proceed to CHEM 102 and 115. Students with credit for CHEM 102 or a succeeding Chemistry lecture course may not take CHEM 101 for further credit.

CHEM 102-3 General Chemistry I
Atomic structure and chemical bonding; gases, liquids, solids, and solutions; thermochemistry; acids and bases; chemistry of main group elements; periodic table; redox reactions. (3-1-0) Prerequisites: BC High School Chemistry 12 or CHEM 101. CHEM 115 and MATH 151 or 154 should be taken concurrently. Students may not count both CHEM 102 and 104 for credit.

CHEM 103-3 General Chemistry II
Chemical equilibria; electrochemistry; chemical thermodynamics; kinetics; transition metal chemistry. (3-1-0) Prerequisite: CHEM 102 (or 104). CHEM 118, MATH 152 (or 155), and PHYS 120 (or 101) or 121 (or 102) should be taken concurrently. Students may not count both CHEM 103 and 105 for credit.

CHEM 106-2 Introductory Chemistry Laboratory
Experiments in general chemistry which illustrate principles described in CHEM 101. (0-0-4) Corequisite: CHEM 101. Students with credit for CHEM 115 or a succeeding Chemistry laboratory course may not take CHEM 106 for further credit.

CHEM 115-2 General Chemistry Laboratory I
Experiments on the preparation, separation and analysis of chemical compounds and measurements of their chemical and physical properties. (0-0-4) Corequisite: CHEM 102. Prerequisite: BC High School Chemistry 12 or CHEM 106.

CHEM 118-2 General Chemistry Laboratory II
Experiments in chemical equilibrium, acids and bases, qualitative analysis, electrochemistry and chemical kinetics. (0-0-4) Prerequisites: CHEM 102 (or 104) and 115. Corequisite: CHEM 103. Students may not count both CHEM 118 and 119 for credit.

CHEM 150-3 Organic Chemistry I
General physical and chemical properties of simple aliphatic compounds including hydrocarbons, alkyl halides, alcohols, ethers, carboxylic acids, aldehydes and ketones. Consideration of free radical and ionic mechanisms. (3-1-0) Prerequisite: CHEM 102 (or 104). CHEM 155 should be taken concurrently. Students may not count both CHEM 150 and 251 for credit.

CHEM 155-2 Organic Chemistry Laboratory I
Laboratory preparation and characterization of simple organic compounds. (0-0-4) Prerequisite: CHEM 102 (or 104) and 115. Corequisite: CHEM 150. Students may not count both CHEM 155 and 256 for credit.

CHEM 218-3 Introduction to Analytical Chemistry
Gravimetric, acid-base, complexometric and redox methods of chemical analysis. Basic instrumental techniques. (2-0-4) Prerequisite: CHEM 103 (or 105) and 118 (or 119).

CHEM 232-3 The Chemistry of Nontransition Elements
The detailed chemistry of nontransition elements and their compounds in terms of fundamental concepts of periodicity of properties, valence, ionization potential, electron affinity, electronegativity, stability of oxidation states, bonding, structure and stereochemistry. (3-1-0) Prerequisite: CHEM 102 (or 104).
CHEM 250-3 Organic Chemistry II
Discussion of aromatic compounds, polyfunctional compounds and complex organic reactions; simple spectroscopy. (3-1-0)
Prerequisite: CHEM 150. CHEM 255 should be taken concurrently. Students may not count both CHEM 250 and 252 for credit.

CHEM 255-2 Organic Chemistry Laboratory II
The use of modern laboratory techniques in organic chemistry. (0-0-4) Prerequisite: CHEM 150 (or 251) and 155 (or 256).
Corequisite: CHEM 250. Students may not count both CHEM 255 and 356 for credit.

CHEM 261-3 Physical Chemistry I
Elements of physical chemistry from a macroscopic point of view. Thermodynamics, and its applications to chemical equilibrium, phase changes and the properties of solutions. (3-1-0) Prerequisites: CHEM 103 (or 105), MATH 152 (or 155), and PHYS 121 (or 102).

CHEM 306-0 Practicum I
This is the first semester of work experience in a co-operative program available to students planning to pursue a career in chemistry or related areas. Prerequisites: Completion of 28 credit hours in a science program, including first-year calculus, chemistry and physics. Minimum CGPA 2.67 (or permission of Co-op Co-ordinator).

CHEM 307-0 Practicum II
This is the second semester of work experience in the Chemistry Co-operative Education program. Prerequisites: CHEM 306 and completion of 42 credit hours toward a BSc degree. Minimum CGPA 2.67 (or permission of Co-op Co-ordinator).

CHEM 316-3 Introductory Instrumental Analysis
Principles and applications of basic analytical instrumentation based upon spectroscopy, chromatography and electrochemistry. (2-0-4) Prerequisite: CHEM 218. Students may not count both CHEM 316 and 416 for credit.

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. (0-0-4) Prerequisites: CHEM 316 and 371. CHEM 372 should be taken concurrently.

CHEM 331-3 Practical Aspects of Inorganic Chemistry
Introduction to bonding, spectroscopy and laboratory techniques in inorganic chemistry. The laboratory part will include experiments from solid state, main group and transition metal chemistry. (2-0-4) Prerequisites: CHEM 118 (or 119, or corequisite CHEM 218) and CHEM 232.

CHEM 332-3 Chemistry of the Transition Metals
The chemistry of transition elements, lanthanides and actinides; the stability and structure of complexes. (3-1-0) Prerequisite: CHEM 331.

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. (3-1-0) Prerequisites: BICH 321 (or 301); or CHEM 250 (or 252) and CHEM 232.

CHEM 336-2 Inorganic Chemistry Laboratory
Laboratory experiments in co-ordination, organometallic and bioinorganic chemistry. (0-0-4) Prerequisite: CHEM 332 must precede or be taken concurrently.

CHEM 357-3 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. (2-0-4) Prerequisites: CHEM 250 (or 252) and 255 (or 356).
CHEM 361-3 Physical Chemistry II
Elements of physical chemistry from the microscopic point of view. Fundamentals of quantum chemistry. Molecular energy levels and molecular spectroscopy. (3-1-0) Prerequisites: CHEM 103 (or 105), MATH 310 and PHYS 211. MATH 232-3 is recommended.

CHEM 362-3 Physical Chemistry III
Energy distributions and elementary statistical thermodynamics, kinetic theory of gases, transport processes, surface chemistry, properties of ionic solutions, electrochemistry. (3-1-0) Prerequisites: MATH 251, CHEM 361 (or PHYS 385) and CHEM 261 (or PHYS 244 or 344).

CHEM 363-3 Kinetics and Mechanism
Basic principles of chemical kinetics, rate laws, mechanisms, reactive intermediates, theories of bi-molecular reactions, solvent effects, photochemistry and experimental methods. (3-1-0) Prerequisites: CHEM 232, 250 (or 252), 261 and MATH 152; or CHEM 362.

CHEM 366-2 Physical Chemistry Laboratory I
Experiments in thermodynamics, chemical kinetics, electrochemistry, and atomic and molecular structure. (0-0-4) Prerequisite: CHEM 261.

CHEM 367-2 Physical Chemistry Laboratory II
Continues CHEM 366. (0-0-4) Prerequisites: CHEM 361 (or PHYS 385) and CHEM 366.

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. (3-1-0) Prerequisites: CHEM 150 (or 251) and CHEM 261.

CHEM 372-3 Chemistry of the Atmospheric Environment
Quantitative treatment of chemical and physical processes in the atmospheric environment. Chemistry of air pollution. Environmental radioactivity, its detection and effects. Specific case studies. (3-1-0) Prerequisites: CHEM 150 (or 251) and CHEM 261.

CHEM 406-0 Practicum III
This is the third semester of work experience in the Chemistry Co-operative Education Program. Prerequisites: CHEM 307 and completion of 56 credit hours toward a BSc degree. Minimum CGPA of 2.67 (or permission of Co-op Co-ordinator).

CHEM 407-0 Practicum IV
This is the last semester of work experience in the Chemistry Co-operative Education Program. Prerequisite: CHEM 406. Minimum CGPA of 2.67 (or permission of Co-op Co-ordinator).

CHEM 408-0 Practicum V
Optional semester of work experience in the Chemistry Co-operative Education program. Prerequisite: CHEM 407.

CHEM 411-3 Crystal Structure Analysis
Geometric features of crystals; X-ray and neutron diffraction by single crystals; structure determination and refinement techniques. (3-1-0) Prerequisite: PHYS 121.

CHEM 415-3 Selected Topics in Analytical Chemistry
Principles and applications of emerging techniques in analytical chemistry. (3-1-0) Prerequisite: CHEM 316.

CHEM 417-3 Advanced Instrumental Analysis
Principles and applications of advanced analytical techniques based upon electrochemistry, nuclear spectroscopy, plasma spectroscopy and mass spectroscopy. (2-0-4) Prerequisite: CHEM 316.
CHEM 432-3 Organotransition Metal Chemistry
The organometallic chemistry of the transition elements; the synthesis, characterization and catalytic behavior of organometallic compounds. (3-1-0) Prerequisite: CHEM 332.

CHEM 433-3 Mechanistic Inorganic Chemistry
Discussion of the mechanisms of reaction of inorganic and organometallic complexes highlighting the use of ligand field and molecular orbital theory, valence bond and electron transfer reactivity. (3-1-0) Prerequisite: CHEM 332.

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 semester. (3-1-0) Prerequisite: CHEM 332.

CHEM 450-3 Mechanistic 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. (3-1-0) Prerequisites: CHEM 261 and 357. Recommended: CHEM 363.

CHEM 455-3 Organic Synthesis
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. (3-1-0) Prerequisites: CHEM 357 or permission of the instructor.

CHEM 459-3 Special Topics in Organic Chemistry
An advanced, in-depth treatment of a specialized area of organic chemistry. (3-1-0) Prerequisite: CHEM 357 or permission of the instructor.

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. (3-1-0) Prerequisite: CHEM 361 or PHYS 385.

CHEM 465-3 Electrochemistry
Theory of electrochemistry, and its applications to chemical and industrial processes. Interfacial potential and charge transfer at electrodes; mechanisms of electrode reactions. Nature and control of corrosion. Electrodeposition and electrorefining of metals; industrial electrochemical processes. Batteries, fuel cells, energy storage and conversion. (3-1-0) Prerequisite: CHEM 261 or equivalent background in thermodynamics.

CHEM 469-3 Selected Topics in Physical Chemistry
The content of this course will cover topics such as chemical kinetics, physical chemistry of polymers, thermodynamics of solutions and other aspects of modern physical chemistry. (3-1-0) Prerequisites: CHEM 261; CHEM 361 and/or CHEM 362 may be required or recommended.

CHEM 472-3 Special Topics in Theoretical Chemistry
Aspects of theoretical chemistry (topics will be determined at the time of offering) such as molecular orbital theory of conjugated systems, Hückel theory, orbital symmetry and group theory. Advanced applications of quantum mechanics to chemical problems. (3-1-0) Prerequisite: CHEM 361 or PHYS 385.

CHEM 481-5 Undergraduate Research
Experimental and/or theoretical research, and preparation of thesis for Major or Honors degree in Chemistry. Admission requires selection of a faculty supervisor and submission of a preliminary research proposal to the department at least two months prior to the start of the semester in which the course will be taken. Prerequisites: permission of the department; knowledge of chemistry at an advanced level. Normally taken during the fourth year of study.
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 at least one month prior to the start of the semester in which the course will be taken. Prerequisite: permission of the department. Normally taken during the fourth year of study.

Graduate Courses

Graduate courses are available to senior undergraduate students for upper division chemistry credit. Refer to the Graduate Studies section of this Calendar and consult an advisor for specific course offerings.

Physics Undergraduate Courses

Faculty of Science
See also courses listed under Nuclear Science (NUSC).

For courses marked with ** individual assistance is available to students in designated locations.

Minimum Grade Requirement
Students wishing to register for Physics courses must have obtained a grade of C- or better in prerequisite courses.

PHYS 100-3 Introduction to Physics
A course for students with relatively weak backgrounds in physics. Kinematics and dynamics; waves; optics; electricity and magnetism. (3-0-1**) Prerequisite: B.C. High School Algebra 12 (or equivalent) or MATH 100 (may be taken concurrently). Students who have obtained a grade of C+ or better in BC High School Physics 12 (or its equivalent) within the previous three years or who have taken any further physics course normally may not take PHYS 100 for credit.

PHYS 101-3 General Physics I
A general survey course for life science students. Kinematics and dynamics, including rotational motion; fluids, properties of matter and thermal physics. (3-0-1**) Prerequisite: BC High School Physics 12 or PHYS 100. Corequisite: MATH 151, 154 or 157 must precede or be taken concurrently. Students with credit for PHYS 120 may not take PHYS 101 for further credit.

PHYS 102-3 General Physics II
A general survey course for life science students. Waves and optics; electricity ad magnetism; modern physics emphasizing radioactivity. (3-0-1**) Prerequisite: PHYS 101. Recommended corequisite: MATH152, 155 or 158 should precede or be taken concurrently. Students are encouraged to take PHYS 130 at the same time as PHYS 102. Students with credit for PHYS 121 may not take PHYS 102 for further credit.

PHYS 120-3 Modern Physics and Mechanics
A general survey course for students in the physical sciences. A survey of physical phenomena from quarks to galaxies, statics and dynamics, special relativity, rotational motion, elementary quantum ideas. (3-0-1**) Prerequisite: BC High School Physics 12 or PHYS 100. Corequisite: MATH 151 or 154 must precede or be taken concurrently. Students with credit for PHYS 101 may not take PHYS 120 for further credit.

PHYS 121-3 Optics, Electricity and Magnetism
A general survey course for students in the physical sciences. Light, geometrical optics, electricity, simple circuits, magnetism, applied physics. (3-0-1**) Prerequisite: PHYS 120 (or PHYS 101 with a grade of A or B). Corequisite: MATH 152 or 155 must precede or be taken concurrently. Students with credit for PHYS 102 may not take PHYS 121 for further credit.

PHYS 130-2 General Physics Laboratory A
Elementary experiments in optics, electricity, mechanics and heat that are designed to augment the general survey course. (0-0-4) Prerequisite: PHYS 102 should be taken concurrently or may precede; or by permission of the department. Student may not count more than one PHYS 130 or 131 for credit.
PHYS 131-2 General Physics Laboratory B
Elementary experiments in optics, electricity, and mechanics that are designed to augment the general survey courses. (0-0-4)
Corequisite: PHYS 121 should be taken concurrently or may precede; or by permission of the department. Students may not count more than one of PHYS 130 or 131 for credit.

PHYS 181-3 Introduction to Physical Science in Archaeology
A course in basic physical ideas and how they are applied in archaeology. Topics included are: the structure of matter, radioactive decay, electromagnetic radiation and magnetism, and how they are used in radiocarbon dating, thermoluminesence dating, magnetic dating, x-ray fluorescence analysis and magnetometer surveying. (3-1-0) Prerequisites: BC High School Algebra 12 (or equivalent) and Physics 11.

PHYS 190-3 Introduction to Astronomy
Historical astronomy, telescopes, the sun and the solar system, stellar evolution, galaxies, cosmology. (3-1-0) Prerequisite: BC high school Math 12 or MATH 100.

PHYS 197-3 Periphysical Topics II
Selected topics from sciences closely allied with physics. (3-1-0) Prerequisites: BC High School Physics 11 or equivalent, and Algebra 12 (or equivalent).

PHYS 211-3 Intermediate Mechanics
An intermediate mechanics course covering kinematics, dynamics, energy, momentum, free, forced and damped oscillations, rigid body motion, gravitation. (3-1-0) Prerequisites: PHYS 121; or PHYS 101 and PHYS 102 with a grade of B or better. Corequisite: MATH 251 must precede or be taken concurrently. Students may not count both PHYS 211 and MATH 263 for credit.

PHYS 221-3 Intermediate Electricity and Magnetism
Electrostatics, magnetostatics, capacitance, inductance, DC and AC circuits, concepts of electric and magnetic fields, Maxwell's equations. (3-1-0) Prerequisite: PHYS 121 or 102. Corequisite: MATH 251. MATH 252 is a recommended corequisite.

PHYS 233-2 Introductory Physics Laboratory A
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. (0-0-3) Prerequisite: PHYS 131 or 130.

PHYS 234-3 Introductory Physics Laboratory B
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. (1-0-3) Prerequisite: PHYS 233.

PHYS 244-3 Thermal Physics
Heat, temperature, heat transfer, kinetic theory, laws of thermodynamics, entropy, heat engines, applications of thermodynamics to special systems, phase transitions. (3-1-0) Prerequisites: PHYS 121 and MATH 251.

PHYS 324-3 Electromagnetics
Electromagnetics, magnetostatics, electromagnetic waves, transmission lines, waveguides, antennas and radiating systems. (3-1-0) Prerequisites: PHYS 221, MATH 252. Students who have obtained credit for PHYS 325 before the 93-1 semester may not take PHYS 324 for further credit.

PHYS 325-3 Relativity and Electromagnetism
Galilean relativity, Lorentz transformation, special relativity, relativistic mechanics, tests of relativity, covariance; field transformations electromagnetism, general relativity. (3-1-0) Prerequisites: PHYS 211, 221, MATH 252.

PHYS 326-3 Electronics and Instrumentation
Circuits and circuit theory, passive and active devices, amplifiers, feedback, modern measurement techniques and instrumentation. (3-1-0) Prerequisite: PHYS 221. Corequisites: PHYS 331 laboratory must be taken concurrently.
PHYS 331-3 Electronics Laboratory
Experiments in electronics, including AC circuits, filters, resonance, diodes, transistors, amplifiers, feedback, oscillators, operational amplifiers, integrated circuits, analogue circuits, digital circuits. (0-0-4) Prerequisite: PHYS 233 or 234. Corequisite: PHYS 326 must be taken concurrently.

PHYS 332-3 Intermediate Laboratory
Experiments in optics and modern physics, including diffraction, interference, spectroscopy, lasers and holography. Engineering Science students will do a selected set of experiments. (0-0-4) Prerequisites: PHYS 233 or 234. PHYS 355 must precede or be taken concurrently.

PHYS 335-0 Practicum I
This is the first semester 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. Prerequisite: completion of 30 hours credit, with a minimum GPA of 2.75 in the Physics program. Students should apply to the department at least one semester in advance. A course fee is required. This course is evaluated on a P/W basis.

PHYS 336-0 Practicum II
This is the second semester 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. Prerequisites: PHYS 335 followed by 12 hours of credit. A minimum cumulative GPA of 2.75. Students should apply to the department at least one semester in advance. A course fee is required. This course is evaluated on a P/W basis.

PHYS 345-3 Statistical Physics
Postulates of statistical mechanics, partition functions, applications to gases, paramagnetism and equilibrium. Quantum statistics and applications. (3-1-0) Prerequisite: PHYS 244 or CHEM 261. PHYS 385 is a recommended prerequisite.

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. (3-1-0) Prerequisite: CHEM 103, PHYS 102 (or 121), MATH 155 (or 152).

PHYS 355-3 Optics
Geometrical and physical optics, interference, diffraction, polarization, coherence, spectra, optical instruments. (3-1-0) Prerequisites: PHYS 221 and MATH 252.

PHYS 365-3 Semiconductor Device Physics
Structure and properties of semiconductors, semiconductor theory, theory and operation of semiconductor devices, semiconductor device technology. (3-1-0) Prerequisite: PHYS 221.

PHYS 384-3 Methods of Theoretical Physics I
Applications of mathematical methods in physics, differential equations of physics, eigen-value problems. (3-1-0) Prerequisites: PHYS 211 (or MATH 263), PHYS 221, MATH 252, MATH 310.

PHYS 385-3 Quantum Physics
Origins of quantum theory, atomic models, waves and particles, Schroedinger equation, free and bound states, the hydrogen atom, atomic structure and spectra. (3-1-0) Prerequisites: PHYS 211 (or MATH 263), PHYS 221, MATH 252. MATH 310 must precede or be taken concurrently.

PHYS 390-3 Introduction to Astrophysics
Characteristics of stars and their evolution, thermodynamics of stellar interior, origin of the elements, galaxies, cosmology, origin of the planets. (3-1-0) Prerequisites: PHYS 211 and either CHEM 103 or 105.
PHYS 413-3 Advanced Mechanics
Central forces, rigid body motion, small oscillations. Lagrangian and Hamiltonian formulations of mechanics. (3-1-0)
Prerequisites: PHYS 384 or PHYS 221, MATH 252, 310, 322 and either PHYS 211 or MATH 263 or permission of the department.

PHYS 415-3 Quantum Mechanics
Foundations of quantum mechanics, Schroedinger equation, perturbation theory, angular momentum, applications. (3-1-0)
Prerequisites: PHYS 385 or CHEM 361 and either PHYS 384 or MATH 314 and MATH 419.

PHYS 425-3 Electromagnetic Theory
Electrostatics and boundary value problems, magnetic fields, Maxwell's equations, radiation and propagation of electromagnetic waves. (3-1-0) Prerequisites: PHYS 325 and either PHYS 384 or MATH 314.

PHYS 430-5 Digital Electronics and Interfacing
Digital logic design with particular apparatus. Construction and use of interface devices for various laboratory experiments. Computer data reduction. (2-0-4) Prerequisites: PHYS 326 and 331; or permission of the instructor.

PHYS 431-4 Advanced Physics Laboratory I
Advanced experiments in Physics. May include special projects. (0-0-6) Prerequisite: PHYS 331; PHYS 332 is recommended.

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 registering for the course. The research must be done during the semester in which the student is registered 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 semester. (0-0-10) Prerequisites: all students interested in taking this course must consult with their faculty supervisor regarding prerequisites; normally requires PHYS 431.

PHYS 435-0 Practicum III
This is the third semester 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. Prerequisites: PHYS 336 and 60 hours of credit with a minimum cumulative GPA of 2.75. Students should apply to the department at least one semester in advance. A course fee is required. This course is evaluated on a P/W basis.

PHYS 436-0 Practicum IV
This is the fourth semester 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. Prerequisites: PHYS 435 followed by 12 hours of credit. A minimum cumulative GPA of 2.75. Students should apply to the department at least one semester in advance. A course fee is required. This course is evaluated on a P/W basis.

PHYS 437-0 Practicum V
This is an optional fifth semester 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. Prerequisites: PHYS 436 and a minimum cumulative GPA of 2.75. Students should apply to the department at least one semester in advance. A course fee is required. This course is evaluated on a pass/withdrawal basis.

PHYS 455-3 Applied Optics
Interaction between light and matter, population inversion, stimulated emission, optical resonators, temporal and spatial coherence, gain and power output of laser oscillators. Selected topics in applied optics such as crystal optics, light modulation, fibre optics, non-linear optics and opto-electronic devices and components. Applications of lasers. (3-1-0) Prerequisites: PHYS 355 and 385.

PHYS 465-3 Solid State Physics
Crystal structure, lattice vibrations and thermal properties of solids, free electron model, band theory, applications. (3-1-0)
Prerequisite: PHYS 385 or CHEM 361.
PHYS 484-3 Nonlinear Physics
Nonlinear mechanics, nonlinear lattice dynamics, competition phenomena, applications in optics and chemistry, forced
oscillations, chaos. (3-1-0) Prerequisite: PHYS 384 or permission of the department.

PHYS 492-2 Special Topics in Physics
Studies in areas not included within the undergraduate course offerings of the Physics Department. (2-0-0) Prerequisite:
permission of the department.

PHYS 493-3 Special Topics in Physics
Studies in areas not included within the undergraduate course offerings of the Physics Department. (3-0-0) Prerequisites:
permission of the department.

Department of Chemistry
Location: C8035 Shrum Science Centre
Telephone: 778.782.3590, 778.782.3765 Fax
Chair: R.S. Korteling AB (Hope), PhD (Calif)

Professors Emeriti
S. Aronoff AB, PhD (Calif)
L. Funt BSc, MSc (Dal), PhD (McG), FCIC
E.M. Voigt BSc, MSc (McM), PhD (Br Col)

University Professor
S. Wolfe BA, MA (Tor), PhD (Ott)

Professors
T.N. Bell BSc, PhD (Durh)
Y.L. Chow BSc (Natni Taiwan), PhD (Duquesne), FCIC
R.J. Cushley BSc, MSc, PhD (Alta)
J.M. D'Auria BSc (Rensselaer), MSc, PhD (Yale)
F.W.B. Einstein BSc (New Zealand), MSc, PhD (Cant)
I.D. Gay BSc, MSc (Dal), PhD (Lond)
C.H.W. Jones BSc, PhD (Manc), Dean of Science
R.G. Korteling AB (Hope), PhD (Calif), Chair of Department
G.L. Malli BSc (Delhi), MSc (McM), MS, PhD (Chic)
A.C. Oehlenschlager BSc, PhD (Oklahoma State)
P.W. Percival BA, MA, DPhil (Oxf)
B.M. Pinto BSc, PhD (Qu), FCIC
R.K. Pomeroy BSc (Lond), PhD (Alta)
W.R. Richards AB, PhD (Calif)
K.N. Slessor BSc, PhD (Br Col)
D. Sutton BSc, PhD (Nott)
J. Walkley BSc, PhD (Liv), FCIC

Associate Professors
T.I. Borgford BSc, PhD (Manit)
R.B. Cornell BSc (Houghton), PhD (Penn)
R.H. Hill BSc, PhD (W Ont)
S. Holdcroft BSc (Sal), PhD (S Fraser)
E. Kiehlmann Vordiplom (Týbingen), PhD (Maryland)
S.K. Lower BA (Calif), MSc (Oregon), PhD (Br Col)
L.K. Peterson BSc, PhD (Aberd)
E.J. Wells BSc, MSc (Syd), DPhil (Oxf), FRSA, FCIC
Assistant Professors
G. Agnes BSc (Wat), PhD (Alta)
A.J. Bennet BSc, PhD (Bristol)
G.W. Leach BSc, MSc, PhD (Tor)
J. Scott AB (Occidental), PhD (Missouri), MD (St. Louis)
D. Sen BA (Camb), MPhil, PhD (Yale)

Associate Member
D.H. Boal Physics

Laboratory Instructors
S.A. Black BSc, MSc (Br Col)
J.C. Brodovitch BSc (Strasbourg), PhD (McG)
A.J.L. Hanlan BSc, PhD (Tor)
M.L. Heit BSc (Kings), MSc, PhD (Dal)
E. Palmer BA (Calif), MSc(Educ) (S Fraser)
A. Yim BSc (Ore), MSc (S Fraser)

Advisor
Dr. T. Hebden BSc, MSc (Lond), PhD (Nott), C8049 Shrum Science Centre, 778.782.3350

Undergraduate courses
Information on CHEM and NUSC undergraduate courses.

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
knowledge of the subject. CHEM 101 and 106 are not required courses for the BSc degree. They are available as electives to
those with no knowledge of chemistry or who are starting from BC High School Chemistry 11. Students who have taken BC
High School Chemistry 12 (or equivalent) normally start with CHEM 102, and 115. Chemistry major and honors students must
fulfill the program requirements listed below and must maintain a grade of C or higher in Chemistry courses. Whether majoring
in Chemistry or not, students may not enroll in any Chemistry course for which a grade of D was obtained in any prerequisite.

Major Program
(120 semester hours)

Required Courses (80 semester hours)
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II
CHEM 150-3 Organic Chemistry I
CHEM 155-2 Organic Chemistry Laboratory I
CHEM 218-3 Introduction to Analytical Chemistry
CHEM 232-3 The Chemistry of Nontransition Elements
CHEM 250-3 Organic Chemistry II
CHEM 255-2 Organic Chemistry Laboratory II
CHEM 261-3 Physical Chemistry I
CHEM 316-3 Introductory Instrumental Analysis
CHEM 331-3 Practical Aspects of Inorganic Chemistry
CHEM 332-3 The Chemistry of Transition Metals
CHEM 336-2 Inorganic Chemistry Laboratory I
CHEM 357-3 Chemical and Instrumental Methods of Identification of Organic Compounds
CHEM 361-3 Physical Chemistry II
CHEM 366-2 Physical Chemistry Laboratory I
CHEM 367-2 Physical Chemistry Laboratory II (50 semester hours)
and one of
CMPT 102-3 Introduction to FORTRAN for Science Students
CMPT 101-4 Modula 2
CMPT 103-3 Introduction PASCAL Programming

and all of
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III
MATH 310-3 Introduction to Ordinary Differential Equations

(18 semester hours)

PHYS 120-3 Modern Physics and Mechanics
PHYS 121-3 Optics, Electricity and Magnetism
PHYS 211-3 Intermediate Mechanics

and a minimum of 3 semester hours selected from
PHYS 131-2 General Physics Laboratory B
PHYS 221-3 Intermediate Electricity and Magnetism
PHYS 233-2 Introductory Physics Laboratory A (12 semester hours)

Electives (40 semester hours)

- an additional four hours of upper division credit in Chemistry, Biochemistry or Nuclear Science and 16 hours of upper division credit in any courses of the student's choice (excluding EDUC 401 to 407) to complete the BSc requirement of 44 hours upper division credit (see Faculty of Science requirements). Students may not include more than 15 credit hours of Individual Study/Undergraduate Research courses in the minimum of 44 hours of upper division credit required for the BSc degree.
- nine hours of electives in subjects outside the Faculty of Science (excluding EDUC 401 to 407), including six hours from the Faculty of Arts
- 11 semester hours of free electives

The mathematics and physics courses should be taken as early as possible so that they will be of benefit in the study of chemistry. Students intending to specialize in physical or theoretical chemistry are advised to take more mathematics and physics courses than specified above.

Typical Course Sequence

The following is a typical course sequence for the first four semesters. Variations are possible.

Semesters 1 and 2
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II
CMPT 102-3 Introduction to FORTRAN for Science Students
MATH 151-3 Calculus I
MATH 152-3 Calculus II
PHYS 120-3 Modern Physics and Mechanics
PHYS 121-3 Optics, Electricity and Magnetism
PHYS 131-2 General Physics Laboratory B
plus three semester hours of electives
Semesters 3 and 4
CHEM 150-3 Organic Chemistry I
CHEM 155-2 Organic Chemistry Laboratory I
CHEM 218-3 Introduction to Analytical Chemistry
CHEM 232-3 The Chemistry of Nontransition Elements
CHEM 250-3 Organic Chemistry II
CHEM 255-2 Organic Chemistry Laboratory II
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III
PHYS 211-3 Intermediate Mechanics
plus five semester hours of electives

**Honors Program**
(132 semester hours)

Students may enter the program at any level after the fourth semester with the approval of the department. Graduation with an honors degree requires 132 semester hours and a cumulative grade point average of 3.00 or higher (see General Information, and Faculty of Science requirements.)

**Required Courses (98 semester hours)**
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II
CHEM 150-3 Organic Chemistry I
CHEM 155-2 Organic Chemistry Laboratory I
CHEM 218-3 Introduction to Analytical Chemistry
CHEM 232-3 The Chemistry of Nontransition Elements
CHEM 250-3 Organic Chemistry II
CHEM 255-2 Organic Chemistry Laboratory II
CHEM 261-3 Physical Chemistry I
CHEM 316-3 Introductory Instrumental Analysis
CHEM 331-3 Practical Aspects of Inorganic Chemistry
CHEM 332-3 The Chemistry of Transition Metals
CHEM 336-2 Inorganic Chemistry Laboratory I
CHEM 357-3 Chemical and Instrumental Methods of Identification of Organic Compounds
CHEM 361-3 Physical Chemistry II
CHEM 362-3 Physical Chemistry III
CHEM 366-2 Physical Chemistry Laboratory I
CHEM 367-2 Physical Chemistry Laboratory II
CHEM 481-5 Undergraduate Research (58 semester hours)

*plus one of*
CMPT 101-4 Modula 2
CMPT 102-3 Introduction to FORTRAN for Science Students
CMPT 103-3 Introduction PASCAL Programming (3-4 semester hours)

*and*
NUSC 341-3 Introduction to Radiochemistry (3 semester hours)

*and*
PHYS 120-3 Modern Physics and Mechanics
PHYS 121-3 Optics, Electricity and Magnetism
PHYS 131-2 General Physics Laboratory B
PHYS 211-3 Intermediate Mechanics
PHYS 221-3 Intermediate Electricity and Magnetism
PHYS 233-2 Introductory Physics Laboratory A (16 semester hours)

and
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III
MATH 310-3 Introduction to Ordinary Differential Equations

plus one of
MATH 252-3 Vector Calculus I
MACM 316-3 Numerical Analysis I (18 semester hours)
MATH 252 is recommended as a corequisite for PHYS 221.

Electives
The following courses must be added to the required upper division courses listed for the degree.

- upper division CHEM, BICH or NUSC courses to provide at least 48 semester hours of credit
- upper division courses chosen from any faculty (but excluding EDUC 401 to 407) to total the upper division credits to 60 semester hours
- free electives in any division to provide 132 total semester hours required for the degree. At least six hours must be from the Faculty of Arts and another three from any Faculty other than Science (excluding EDUC 401 to 407).

Minor Program
For details of major-minor regulations, see General Information. For a Chemistry minor, students must complete a minimum of 14 upper division credit hours in Chemistry, Biochemistry or Nuclear Science (including a minimum of eight hours in Chemistry, and excluding undergraduate research courses), together with all the prerequisites.

Typical Course Combinations
Typical course combinations providing emphasis in three specific areas of interest are listed below. Other variations are possible.

Organic Chemistry
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II
CHEM 150-3 Organic Chemistry I
CHEM 155-2 Organic Chemistry Laboratory I
CHEM 250-3 Organic Chemistry II
CHEM 255-2 Organic Chemistry Laboratory II
CHEM 357-3 Chemical and Instrumental Methods of Identification of Organic Compounds

and four courses from
BICH 311-2 Analytical Biochemistry Laboratory
BICH 312-2 Metabolism Laboratory
BICH 321-2 Intermediary Metabolism
CHEM 316-3 Introductory Instrumental Analysis
CHEM 363-3 Kinetics and Mechanism
CHEM 450-3 Mechanistic Organic Chemistry
CHEM 455-3 Organic Synthesis
CHEM 459-3 Special Topics in Organic Chemistry
Inorganic/Radiochemistry
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II
CHEM 232-3 The Chemistry of Nontransition Elements
CHEM 331-3 Practical Aspects of Inorganic Chemistry
CHEM 332-3 Chemistry of the Transition Metals
CHEM 336-2 Inorganic Chemistry Laboratory

and six credit hours from
CHEM 316-3 Introductory Instrumental Analysis
CHEM 333-3 Inorganic Chemistry of Biological Processes
CHEM 415-3 Selected Topics in Analytical Chemistry
CHEM 432-3 Organotransition Metal Chemistry
CHEM 433-3 Mechanistic Inorganic Chemistry
CHEM 439-3 Special Topics in Inorganic 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

Physical Chemistry
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II
CHEM 261-3 Physical Chemistry I
CHEM 361-3 Physical Chemistry II
CHEM 366-2 Physical Chemistry Laboratory I

and nine credit hours from
CHEM 316-3 Introductory Instrumental Analysis
CHEM 362-3 Physical Chemistry III
CHEM 363-3 Kinetics and Mechanism
CHEM 366-2 Physical Chemistry Laboratory I
CHEM 367-2 Physical Chemistry Laboratory II
CHEM 462-3 Molecular Spectroscopy
CHEM 465-3 Electrochemistry
CHEM 469-3 Selected Topics in Physical Chemistry
CHEM 472-3 Special Topics in Theoretical Chemistry

Environmental Chemistry Minor Program
Students must complete the following courses.

CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II
CHEM 150-3 Organic Chemistry I
CHEM 155-2 Organic Chemistry Laboratory I
CHEM 218-3 Introduction to Analytical Chemistry
CHEM 232-3 The Chemistry of Nontransition Elements
CHEM 261-3 Physical Chemistry I
CHEM 316-3 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 357-3 Chemical and Instrumental Methods of Identification of Organic Compounds
CHEM 415-3 Selected Topics in Analytical Chemistry
CHEM 417-3 Advanced Instrumental Analysis
NUSC 341-3 Introduction to Radiochemistry

Nuclear Science Minor Program
A minor program in Nuclear Science is offered jointly with the Department of Physics. To qualify for this minor, students must complete a minimum of 14 hours of upper division credit selected from the following courses.

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 442-3 Properties of Nuclear Matter
NUSC 444-3 Special Topics in Nuclear Science
NUSC 485-3 Particle Physics
PHYS 385-3 Quantum Physics

Advice to Students from Other Faculties
The prerequisites and corequisites cited in the Undergraduate Courses are for students intending to specialize in science. Some of these may be waived for students pursuing degree programs in the Faculties of Applied Sciences, Arts, Business Administration and Education.

Particular attention is drawn to CHEM 003 and 004 which are courses of wide appeal to non-science students. Science students may take these courses as free electives. CHEM 101 (lecture) and 106 (laboratory) are two additional courses suitable for students with no previous training in chemistry.

Other Programs
Interdisciplinary programs in Biochemistry and Chemical Physics are also available. See Biochemistry Program and Chemical Physics Program.

Co-operative Education Program
Ms. C. Horvath, Co-op Co-ordinator, Faculty of Science, 778.782.3270

Co-operative Education is a system which combines work experience with academic studies. The student spends alternate semesters on campus and in study related jobs.

A major and honors program leading to a BSc degree, and a Co-operative Education program incorporating four work semesters are available to qualified students in Chemistry and related areas. The work practicum requirements are CHEM 306, 307, 406 and 407.

To enroll in the Co-operative Education program, students must apply at least three months prior to the start of the semester in which they wish to enroll in CHEM 306. Students should seek advice from the department as early as possible in their university careers. They must obtain a minimum cumulative GPA of 2.67 to enroll and continue in the major in Co-operative Education. Higher averages normally required for entry to and continuance in an honors program apply to those taking an honors program in Co-operative Education.

For further details, refer to the Co-operative Education section.
Nuclear Science Undergraduate Courses

Faculty of Science
Requirements for the Nuclear Science Minor Program are listed in the Department of Chemistry section.

See also courses listed under Chemistry (CHEM) and Physics (PHYS).

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. (3-1-0) Prerequisite: completion of 60 credit hours in a science program, including first-year calculus, chemistry and physics.

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. (3-1-0) Prerequisite: NUSC 341 or permission of the department. MATH 251 is recommended.

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. (3-1-0) Prerequisite: completion of 60 credit hours in a science program, including first year calculus, chemistry and physics.

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. (0-0-4) Prerequisite: NUSC 341.

NUSC 442-3 Subatomic Physics
Tools and techniques for investigating subatomic phenomena, symmetries and conservation laws, interactions, energetics of particles and nuclei, applications of nuclear physics. (3-1-0) Prerequisite: CHEM 361 or PHYS 385.

NUSC 444-3 Special Topics in Nuclear Science
Advanced topics in nuclear science. (3-1-0) Prerequisite: NUSC 342 or 442, or permission of the department.

NUSC 485-3 Particle Physics
Physics of elementary particles. Symmetries, strong interactions, electromagnetic interactions, weak interaction. (3-1-0) Prerequisite: PHYS 385 or CHEM 361 or permission of the department.

Earth Sciences Program
Director: M.C. Roberts, 8103 South Science Building, 778.782.4657

Professors
E.J. Hickin BA, PhD (Syd), PGeo
M.C. Roberts BSc (Lond), MA (Tor), PhD (Iowa), PGeo

The Earth Sciences Program is a new academic unit which will begin offering BSc and BSc (honors) degrees in geoscience in September 1995.

During 1995-96, courses will be offered at the 100 and 200 levels, and upper division courses will be introduced in Fall 1996.
Undergraduate courses
Course descriptions for all Earth Sciences undergraduate courses.

Major Program

Lower Division Requirements
(54 semester hours)

BISC 102-4 General Biology
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory
EASC 101-3 Physical Geology
EASC 102-3 Historical Geology
EASC 201-3 Stratigraphy and Sedimentation
EASC 202-3 Introduction to Mineralogy
EASC 203-3 Paleontology
EASC 204-3 Structural Geology I
EASC 205-3 Introduction to Petrology
EASC 206-1 Field Geology I
GEOG 213-3 Geomorphology
MATH 151-3 Calculus I
MATH 152-3 Calculus II
PHYS 120-3 General Physics I
PHYS 121-3 General Physics II
PHYS 131-2 General Physics Laboratory
STAT 101-3 Introduction to Statistics

Upper Division Requirements
These courses will be offered beginning in the 1996-97 academic year.

Professional Registration as a B.C. Geoscientist

The right to practice in, and to accept professional responsibility for geoscience in BC is limited to those who are registered members of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC). Requirements for registration can be met through the Earth Science Program and selected courses in other university departments. Students interested in professional registration should consult the Director for further details.

Earth Sciences

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. (Lecture/Laboratory) Students with credit for GEOG 112 cannot take this course for further credit.

EASC 102-3 Historical Geology
An introduction to the study of the evolution of the earth; the geological time scale, fossils and evolution; stratigraphic concepts; geological history of western Canada (Lecture/Laboratory)

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. (Lecture/Laboratory) Prerequisites: EASC 101 or GEOG 111; and EASC 102.
EASC 202-3 Introduction to Mineralogy
Introduction to crystallography, crystal chemistry and chemical properties and chemical principles necessary for the study of minerals. (Lecture/Laboratory) Prerequisites: EASC 101, CHEM 102 and 115.

EASC 203-3 Paleontology
Principles of classification, morphology and development of the major groups of animals and plants in the geological record; the paleoecologic significance of fossils. (Lecture/Laboratory) Prerequisites: EASC 102 and BISC 100.

EASC 204-3 Structural Geology I
Description, classification and interpretation of earth structures: fold, faults, joints, cleavage and lineations. Elementary rock mechanics. (Lecture/Laboratory) Prerequisites: EASC 101 and 102, PHYS 120.

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. (Lecture/Laboratory) Prerequisites: EASC 202, CHEM 103 and 118, PHYS 121 and 131.

EASC 206 Field Geology I
Seven days of field excursions to demonstrate the geology of British Columbia. (Field Trips) Prerequisites: EASC 101 and 102.

Environmental Science Program
Advisors

Dr. J.R. Dahn, Department of Physics, P8470 Shrum Science Centre, 778.782.3438, 778.782.3592 Fax

Dr. A.P. Farrell, Department of Biological Sciences, 6151 South Science Building, 778.782.3647, 778.782.3496 Fax

Dr. R.H. Hill, Department of Chemistry, 8106 South Science Building, 778.782.4871, 778.782.3765 Fax

Dr. R.D. Routledge, Department of Mathematics and Statistics, TLX 10537, 778.782.4478, 778.782.4947

The Environmental Science Program provides a broad education with specialization in one of five areas of emphasis: Biology, Chemistry, Environmetrics, Pollutant Transport, and Quantitative Techniques for Resource Management.

The extensive lower division requirements necessitates that students carefully plan the sequencing of their course load to ensure timely completion of the program. Advice can be sought from the advisors listed above.

Undergraduate courses
Course descriptions for all Environmental Science undergraduate courses.

Major Program
This program requires completion of 120 credit hours containing a minimum of 44 in courses numbered 300 and above, and a minimum of 12 from outside the Faculty of Science. The minimum CGPA for continuation and graduation is 2.50. General University and Faculty of Science regulations also apply.

The following requirements are organized by year to suggest a sequence for timely completion of the program.

Biology

Lower Division Requirements
Year One
BISC 101-4 General Biology
BISC 102-4 General Biology
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II
ENPL 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 General Physics I
PHYS 120-3 Modern Physics and Mechanics

Year Two

BICH 221-3 Cellular Biology and Biochemistry
BISC 204-3 Introduction to Ecology
CHEM 150-3 Organic Chemistry I
CHEM 155-2 Organic Chemistry Laboratory I
CHEM 218-3 Introduction to Analytical Chemistry
ENPL 200-3 Environmental Dynamics
GEOG 111-3 Physical Geography

and one of
STAT 270-3 Introduction to Probability and Statistics
STAT 301-3 Statistics for the Life Sciences

and one of
PHYS 102-3 General Physics II
PHYS 121-3 Optics, Electricity and Magnetism

Upper Division Requirements

Year Three

BISC 304-3 Animal Ecology
BISC 305-3 Animal Physiology
BISC 312-3 Environmental Toxicology I
ECON 103-3 Principles of Microeconomics
ECON 105-3 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 Environmental Science Seminar
GEOG 316-4 Ecosystem Biogeochemistry
STAT 403-3 Intermediate Sampling and Experimental Design
* this course has not yet been approved by the Senate of the University

and any three of the following courses may be completed in years three or four

**Plant Biology**
BISC 310-3 The Plants and Animals of British Columbia
BISC 326-3 Biology of Non-Vascular Plants
BISC 337-3 Comparative Morphology, Distribution and Evolution of Vascular Plants
BISC 366-3 Plant Ecophysiology

**Invertebrate Biology**
BISC 306-3 Invertebrate Biology
BISC 406-3 Marine Invertebrate Biology

**Vertebrate Biology**
BISC 315-3 Vertebrate Biology
BISC 407-3 Population Dynamics
BISC 415-3 Ornithology
BISC 416-3 Fish Biology
BISC 419-3 Wildlife Ecology

**Note:** BICH 221 and 222 are complementary courses and together cover all aspects of cellular structure and function. We, therefore, strongly recommend that students take BICH 222 as an elective.

**Electives**
Additional electives are required to meet the total graduation requirement of 120 credit hours, including at least 44 at the upper division level.

**Chemistry**

**Lower Division Requirements**
These requirements are the same as for the Biology area of emphasis. Please refer to that section above.

**Upper Division Requirements**

**Year Three**

CHEM 232-3 Chemistry of Nontransition Elements
CHEM 250-3 Organic Chemistry II
CHEM 255-2 Organic Chemistry II Laboratory
CHEM 261-3 Physical Chemistry I
CHEM 316-3 Introductory Instrumental Analysis
CHEM 317-2 Analytical Environmental Chemistry
ECON 103-3 Principles of Microeconomics
ECON 105-3 Principles of Macroeconomics
STAT 302-3 Analysis of Experimental and Observational Data

**Year Four**

BISC 312-3 Environmental Toxicology I
CHEM 331-3 Practical Aspects of Inorganic Chemistry
CHEM 371-3 Chemistry of the Aqueous Environment
CHEM 372-3 Chemistry of the Atmospheric Environment
* EVSC 401-1 Environmental Science Seminar
PHYS 346-3 Energy and the Environment
STAT 403-3 Intermediate Sampling and Experimental Design
and at least seventeen credit hours from the following courses may be completed in years three or four.

BISC 305-3 Animal Physiology
BISC 414-3 Limnology
CHEM 332-3 Chemistry of the Transition Metals
CHEM 357-3 Chemical and Instrumental Methods of Identification of Organic Compounds
CHEM 362-3 Physical Chemistry III
CHEM 417-3 Advanced Instrumental Analysis
GEOG 316-4 Ecosystem Biogeochemistry
GEOG 317-4 Soil Geography
GEOG 419-4 Mass Transfer in the Biosphere
NUSC 341-3 Introduction to Radiochemistry
NUSC 342-3 Introduction to Nuclear Science
NUSC 346-2 Radiochemistry Laboratory

* this course has not yet been approved by the Senate of the University

Electives
Additional electives may be required to meet the total graduation requirement of 120 credit hours, including at least 44 at the upper division level.

Envronmetrics

Lower Division Requirements
These requirements are the same as for the Biology area of emphasis. Please refer to that section above.

Upper Division Requirements

Year Three

CHEM 261-3 Physical Chemistry I
CHEM 316-3 Introductory Instrumental Analysis
CHEM 371-3 Chemistry of the Aqueous Environment
ECON 103-3 Principles of Microeconomics
ECON 105-3 Principles of Macroeconomics
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III
STAT 330-3 Linear Models in Applied Statistics I
STAT 350-3 Linear Models in Applied Statistics II

Year Four

CHEM 317-2 Analytical Environmental Chemistry
* EVSC 401-1 Environmental Science Seminar
PHYS 346-3 Energy and the Environment
STAT 402-3 Generalized Linear and Nonlinear Modeling
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 may 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
ENPL 410-4 Water and Air Quality Monitoring and Management
ENPL 412-4 Environmental Modeling
ENPL 414-4 Solid and Hazardous Waste Management
ENPL 445-4 Environmental Risk Assessment and Management of Hazardous Substances
GEOG 214-3 Climatology I
GEOG 316-4 Ecosystem Biogeochemistry
GEOG 354-4 Introduction to Geographic Information Systems
GEOG 419-4 Mass Transfer in the Biosphere

* this course has not yet been approved by the Senate of the University

Electives
Additional electives are required to meet the total graduation requirement of 120 credit hours, including at least 44 at the upper division level.

Suggested Groupings of Courses
The following groupings of courses for different focuses are suggested.

**Biology Focus**
BISC 304-3 Animal Ecology
BISC 312-3 Environmental Toxicology I
ENPL 445-4 Environmental Risk Assessment and Management of Hazardous Substances
GEOG 316-4 Ecosystem Biogeochemistry

**Aqueous Chemistry Focus**
BISC 414-3 Limnology
ENPL 410-4 Water and Air Quality Monitoring and Management
ENPL 411-4
GEOG 311-4 Hydrology I
GEOG 316-4 Ecosystem Biogeochemistry
GEOG 419-4 Mass Transfer in the Biosphere

**Atmospheric Focus**
CHEM 372-3 Chemistry of the Atmospheric Environment
ENPL 410-4 Water and Air Quality Monitoring and Management
ENPL 415-4
GEOG 214-3 Climatology I
GEOG 419-4 Mass Transfer in the Biosphere

**Toxic Materials Focus**
BISC 312-3 Environmental Toxicology I
ENPL 412-4 Environmental Modeling
ENPL 414-4 Solid and Hazardous Waste Management
ENPL 445-4 Environmental Risk Assessment and Management of Hazardous Substances

**Pollutant Transport**

**Lower Division Requirements**

**Year One**

BISC 101-4 General Biology
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II
ENPL 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 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

Year Two

BISC 102-4 General Biology
CHEM 150-3 Organic Chemistry I
ENPL 200-3 Environmental Dynamics
GEOG 111-3 Physical Geography
MATH 232-3 Elementary Linear Algebra
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
CMPT 102-3 Introduction to FORTRAN for Science Students
CMPT 103-3 Introduction to PASCAL Programming

Upper Division Requirements

Year Three

CHEM 218-3 Introduction to Analytical Chemistry
CHEM 250-3 Organic Chemistry II
CHEM 261-3 Physical Chemistry I
MACM 316-3 Numerical Analysis I
MATH 310-3 Introduction to Ordinary Differential Equations
PHYS 346-3 Energy and the Environment
STAT 330-3 Linear Models in Applied Statistics I

Year Four

CHEM 371-3 Chemistry of the Aqueous Environment
CHEM 372-3 Chemistry of the Atmospheric Environment
* EVSC 401-1 Environmental Science Seminar
MATH 416-3 Numerical Analysis II
STAT 403-3 Intermediate Sampling and Experimental Design

and at least 17 credit hours from the following may be completed in years three or four
BISC 312-3 Environmental Toxicology I
BISC 414-3 Limnology
CHEM 316-3 Introductory Instrumental Analysis
CHEM 317-3 Analytical Environmental Chemistry
ENPL 412-4 Environmental Modeling
ENPL 445-4 Environmental Risk Assessment and Management of Hazardous Substances
GEOG 214-3 Climatology I
GEOG 311-4 Hydrology
GEOG 314-4 Climatology II
GEOG 316-4 Ecosystem Biogeochemistry
GEOG 317-4 Soil Geography
GEOG 354-4 Introduction to Geographic Information Systems
GEOG 414-4 Climatology III
GEOG 419-4 Mass Transfer in the Biosphere
MATH 314-3 Boundary Value Problems
MATH 462-3 Fluid Dynamics
NUSC 341-3 Introduction to Radiochemistry

* this course has not yet been approved by the Senate of the University

Electives
Additional electives are required to meet the total graduation requirement of 120 credit hours, including at least 44 at the upper division level.

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
ENPL 412-4 Environmental Modeling
GEOG 311-4 Hydrology
GEOG 316-4 Ecosystem Biogeochemistry
GEOG 419-4 Mass Transfer in the Biosphere

Aqueous Chemistry Focus
BISC 414-3 Limnology
CHEM 316-4 Introductory Instrumental Analysis
CHEM 317-2 Soil Geography
ENPL 412-4 Environmental Modeling
GEOG 311-4 Hydrology I
GEOG 316-4 Ecosystem Biogeochemistry
NUSC 341-3 Introduction to Radiochemistry

Atmospheric Focus
BISC 312-3 Environmental Toxicology I
ENPL 412-4 Environmental Modeling
GEOG 214-3 Climatology I
GEOG 314-4 Climatology II
GEOG 414-4 Climatology III
GEOG 419-4 Mass Transfer in the Biosphere

Model Building Focus
BISC 414-3 Limnology
ENPL 412-4 Environmental Modeling
GEOG 214-3 Climatology I
GEOG 311-4 Hydrology
GEOG 354-4 Introduction to Geographic Information Systems
GEOG 419-4 Mass Transfer in the Biosphere
MATH 314-3 Boundary Value Problems
MATH 462-3 Fluid Dynamics

Quantitative Techniques for Resource Management

Lower Division Requirements

Year One
BISC 101-4 General Biology
BISC 102-4 General Biology
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
ECON 103-3 Principles of Microeconomics
ENPL 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 General Physics I
PHYS 120-3 Modern Physics and Mechanics

Year Two

BISC 204-3 Introduction to Ecology
ECON 105-3 Principles of Macroeconomics
ECON 260-3 Environmental Economics
ENPL 200-3 Environmental Dynamics
GEOG 111-3 Physical Geography
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III
STAT 270-3 Introduction to Probability and Statistics

and one of
CMPT 102-3 Introduction to FORTRAN for Science Students
CMPT 103-3 Introduction to PASCAL Programming

and one of
PHYS 102-3 General Physics II
PHYS 121-3 µOptics, Electricity and Magnetism

Upper Division Requirements

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 330-3 Linear Models in Applied Statistics I
STAT 350-3 Linear Models in Applied Statistics II

Year Four

BISC 407-3 Population Dynamics
* ENVS 401-1 Environmental Science Seminar
MATH 309-3 Continuous Optimization
STAT 402-3 Generalized Linear and Nonlinear Modeling
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 may be completed in years three or four*

- BISC 305-3 Animal Physiology  
- BISC 400-3 Evolution  
- ECON 261-3 Resources and the Economy of British Columbia  
- ENPL 346-3 Impact Assessment  
- ENPL 412-4 Environmental Modeling  
- ENPL 413-4 Fisheries Management  
- ENPL 443-3 Decision Making in Resource and Environmental Management  
- ENPL 445-4 Environmental Risk Assessment and Management of Hazardous Substances  
- ENPL 471-4 Forest Ecosystem Management  
- GEOG 354-4 Introduction to Geographic Information Systems

*This course has not yet been approved by the Senate of the University*

Electives  
Additional electives are required to meet the total graduation requirement of 120 credit hours, including at least 44 at the upper division level.

Suggested Groupings of Courses  
The following groupings of courses for different focuses are suggested.

**Fisheries Focus**  
- BISC 305-3 Animal Physiology  
- BISC 400-3 Evolution  
- ENPL 412-4 Environmental Modeling  
- ENPL 413-4 Fisheries Management  
- GEOG 354-4 Introduction to Geographic Information Systems

**Economic Focus**  
- ECON 261-3 Resources and the Economy of British Columbia  
- ENPL 346-3 Impact Assessment  
- ENPL 443-3 Decision Making in Resource and Environmental Management  
- ENPL 445-4 Environmental Risk Assessment and Management of Hazardous Substances  
- GEOG 354-4 Introduction to Geographic Information Systems

**Forestry Focus**  
- ECON 261-3 Resources and the Economy of British Columbia  
- ENPL 346-3 Impact Assessment  
- ENPL 443-3 Decision Making in Resource and Environmental Management  
- ENPL 471-4 Forest Ecosystem Management  
- GEOG 354-4 Introduction to Geographic Information Systems

**Honors Program**  
This program requires a minimum of 132 semester hours. At least 60 must be upper division and 12 must be outside the Faculty of Science. Of these 60 hours, at least 48 must be in one subject area and are normally selected from the 300-400 level 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. General University and Faculty of Science regulations also apply.

**Biology**  
Students must complete all requirements in the major program for this area of emphasis, plus all requirements for the honors program. The required 48 upper division semester hours in a specific subject requires all of
Other courses may be substituted subject to the approval of a faculty advisor.

Chemistry
Students must complete all requirements for this area of emphasis in the major program, plus all requirements for the honors program, and also complete

CHEM 481-5 Undergraduate Research

In order to fulfill the required 48 upper division semester hours 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 subject to the approval of a faculty advisor.

Environmetrics
Students must complete all requirements for this area of emphasis in the major program, plus all requirements for the honors program, and also complete

STAT 450-3 Statistical Theory

To fulfill the required 48 upper division hours 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.

Quantitative Techniques for Resource Management
Students must complete all requirements for this area of emphasis in the major program plus all requirements for the honors program. To fulfill the required 48 upper division semester hours 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.

Pollutant Transport
Students must complete all requirements for this area of emphasis in the major program, plus all requirements for the honors program, and complete both

MATH 314-3 Boundary Value Problems
MATH 462-3 Fluid Dynamics

To fulfill the required 48 upper division semester hours in a specific subject area, the student normally will 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.

Environmental Science Undergraduate Courses

Faculty of Science
ENPL 100-3 Global Change
Humanity’s role in changing the face of the earth: 1) changes in population and society: technological change; institutions, social organization, and cultural values; patterns of production and consumption; urbanization; changing attitudes and emphasis. 2) transformation of the global environment: land-forests; soils; sediment transfer; water-terrestrial water systems; costal zone; oceans; atmosphere; biota-terrestrial fauna, marine biota, flora; understanding transformations. (2-1-0)
ENPL 200-3 Environmental Dynamics

This course introduces students to the multi-disciplinary nature of environmental studies, science, and management based on a holistic systems oriented view of environmental problems. The most important environmental problems in the world are reviewed from a multi-disciplinary approach. The course introduces students to the natural dynamics of the environment and complements ENPL 100, which addresses the human aspects of environmental problems. ENPL 100 is recommended. (2-1-0)

General Science Program
Location: P 9447 Shrum Science Centre
Telephone: 778.782.4222, 778.782.3424 Fax
Advisor: Dr. K. Stuart, BSc (McG), PhD (Lond)

This degree program, consisting of 120 semester hours, provides a broad education in several fields with some specialization in at least two fields. The program requires two Faculty of Science minors in different subject areas, including lower division prerequisites from two of six groupings below. Completion of two minors requires 28 semester hours, but some additional credit hours may be needed depending on the minors' individual requirements.

Choose one minor each from two of the following groups. You may not choose two minors from the same group.

- Biological Sciences, Environmental Toxicology
- Biochemistry, Chemistry
- Mathematics, Statistics
- Physics
- Quaternary Studies, Physical Geography
- Nuclear Science

Undergraduate courses
Course descriptions for the Science undergraduate course.

Lower Division Requirements
BISC 101-4 Introduction to Biology
BISC 102-4 Introduction to Biology (8 semester hours)

and
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CHEM 118-2 General Chemistry Laboratory II

or
CHEM 102-3 General Chemistry I
CHEM 115-2 General Chemistry Laboratory I
CHEM 150-3 Organic Chemistry
CHEM 155-2 Organic Chemistry Laboratory I (10 semester hours)

and
PHYS 101-3 General Physics I
PHYS 102-3 General Physics II
PHYS 130-2 General Physics Laboratory A

or
PHYS 120-3 Modern Physics and Mechanics
PHYS 121-3 Optics, Electricity and Magnetism
PHYS 131-2 General Physics Laboratory B (8 semester hours)
and
MATH 154-3 Calculus I for the Biological Sciences
MATH 155-3 Calculus II for the Biological Sciences

or
MATH 151-3 Calculus I
MATH 152-3 Calculus II (6 semester hours)

and
STAT 102-3 Introduction to Statistics, Option B

or
STAT 270-3 Introduction to Probability and Statistics (3 semester hours)

and
GEOG 111-3 Physical Geography

or
GEOG 112-3 Introductory Geology (3 semester hours)

one of
CMPT 101-4 Modula 2
CMPT 102-3 Introduction to FORTRAN for Science Students
CMPT 103-3 Introduction to PASCAL Programming

(3 or 4 semester hours)

**Upper Level Requirements**
STAT 302-3 Analysis of Experimental and Observational Data

or
STAT 330-3 Linear Models in Applied Statistics

In addition, students must complete the upper level requirements for the two chosen minors (see list of possible minor combinations above).

(3 semester hours)

**Other Requirements**
The student must also satisfy the following general requirements:

- additional upper division courses in Science (including Physical Geography) to give a minimum of 44 semester hours of upper division credit
- a minimum of 12 semester hours taken outside the Faculty of Science and Physical Geography including a minimum of six semester hours from the Faculty of Arts
- a GPA of 2.0 in upper division courses required for each of two subject area minors with a minimum C- grade in courses used for the subject area minors
- students should consult departmental advisors about selection of upper division courses in their subject minors. Students should include Science-related courses such as PHIL 244, 341 and HIST 360, 361 in their programs.
Science

Faculty of Science

SCI 010-3 Contemporary Topics in Natural Sciences

Members of all departments of the Faculty of Science discuss topics in recent news to give non-science students an insight into modern science. (3-0-0)

Geography Program
Location: 7123 Classroom Complex
Telephone: 778.782.3321

Advisor
Ms. I. Curtis, 7124 Classroom Complex, 778.782.4128

The Department of Geography offers a program of study within the Faculty of Science leading to the degree of Bachelor of Science with a major or honors in Geography. Students interested in a Bachelor of Arts degree in Geography should refer to the Faculty of Arts.

Requirements for the Bachelor of Science in Geography are set out below.

A student entering the program should contact a member of the Advising Committee to plan the course work for one of the recommended options: biogeography, climatology, geomorphology or terrain evaluation.

Undergraduate courses (unavailable)
Course descriptions for all Geography undergraduate courses.

Major Program

Lower Division Requirements
(Total required hours 54)

Required Geography Courses
GEOG 100-3 Human Geography
GEOG 111-3 Physical Geography
GEOG 112-3 Introductory Geology

two of
GEOG 213-3 Geomorphology I
GEOG 214-3 Climatology I
GEOG 215-3 Biogeography

one of
GEOG 221-3 Economic Geography
GEOG 241-3 Social Geography

one of
GEOG 250-3 Cartography I
GEOG 253-3 Aerial Photographic Interpretation (21 semester hours)

Required Faculty of Science Courses
BISC 101-4 Introduction to Biology
BISC 102-4 Introduction to Biology (8 semester hours)
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I (8 semester hours)
PHYS 101-3 General Physics I
PHYS 102-3 General Physics II
PHYS 130-2 General Physics Laboratory A (8 semester hours)
STAT 101-3 Introduction to Statistics, Option A

plus both of
MATH 151-3 Calculus I
MATH 152-3 Calculus II

or both of
MATH 154-3 Calculus I for the Biological Sciences
MATH 155-3 Calculus II for the Biological Sciences (9 semester hours)

Any student planning to take further courses in Chemistry, Mathematics or Physics may need to take MATH 251. Further, any student planning to take additional courses in Chemistry may need to take CHEM 118.

Courses outside the Faculty of Science and outside the department of Geography Science stream require a minimum of six hours.

Upper Division Requirements
(total specified hours 45)

Required Geography Courses - 300 Level
three of
GEOG 311-4 Hydrology I
GEOG 313-4 Geomorphology II
GEOG 314-4 Climatology II
GEOG 315-4 Regional Ecosystems
GEOG 316-4 Ecosystem Biogeochemistry
GEOG 317-4 Soil Science I (12 semester hours)

one of
GEOG 322-4 World Resources
GEOG 323-4 Geography of Manufacturing
GEOG 324-4 Geography of Transportation
GEOG 325-4 Geography of Service Activities
GEOG 344-4 Geography of Modern Industrial Societies
GEOG 362-4 Geography of Urban Development
GEOG 369-4 Human Microgeography
GEOG 375-4 Historical Geography I
GEOG 381-4 Political Geography
GEOG 382-4 Population Geography
GEOG 383-4 Regional Development and Planning I
GEOG 385-4 Food Production and the Environment
GEOG 386-4 Medical Geography (4 semester hours)

one of
GEOG 301-4 Geographic Ideas and Methodology
GEOG 351-4 Cartography II
GEOG 352-4 Methods in Spatial Analysis II
GEOG 353-4 Remote Sensing
GEOG 354-4 Introduction to Geographic Information Systems
GEOG 355-4 Technical Issues in Geographic Information Systems
GEOG 356-4 Cognitive Cartography (4 semester hours)
Required Geography Courses - 400 Level

two of
GEOG 411-4 Hydrology II
GEOG 412-4 Quaternary Geology and Geomorphology
GEOG 413-4 Geomorphology III
GEOG 414-4 Climatology III
GEOG 415-4 Advanced Biogeography
GEOG 416-4 Pleistocene Geography
GEOG 417-4 Soil Science II
GEOG 418-4 Land Evaluation
GEOG 419-4 Mass Transfer in the Biosphere (8 semester hours)

plus 8 additional hours of upper level courses from any 300 or 400 level courses in Geography (8 semester hours)

Faculty of Science Courses
Students must complete a minimum of nine semester hours of 300-400 division BICH, BISC, CHEM, EASC, MATH, PHYS and STAT courses.

(9 hours)

A student must present a total of 44 semester hours of upper division credit (excluding EDUC 401, 402, 405 and 406), and additional credit in any courses (excluding EDUC 401, 402, 405 and 406) sufficient to bring the total credit for the degree to 120 semester hours. (See Faculty of Science requirements.)

Honors Program
This program is the same as the major program except that it must include a minimum of 60 semester hours of 300-400 division courses, of which 48 must be in Geography or Faculty of Science subjects. A student must complete a total of 132 semester hours of credit. (See Faculty of Science requirements.) Entry into the honors program requires the approval of the department.

Physical Geography Minor Program

Lower Division Requirements
all of
GEOG 100-3 Human Geography
GEOG 111-3 Physical Geography

plus one of
GEOG 250-3 Cartography I
GEOG 253-3 Aerial Photographic Interpretation

Upper Division Requirements
A minimum of 16 hours is required selected from the following.
GEOG 311-4 Hydrology I
GEOG 313-4 Geomorphology II
GEOG 314-4 Climatology II
GEOG 315-4 Regional Ecosystems
GEOG 316-4 Ecosystem Biogeochemistry
GEOG 317-4 Soil Science I
GEOG 411-4 Hydrology II
GEOG 412-4 Quaternary Geology and Geomorphology
GEOG 413-4 Geomorphology III
GEOG 414-4 Climatology III
GEOG 415-4 Advanced Biogeography
GEOG 416-4 Pleistocene Geography
GEOG 417-4 Soil Science II
GEOG 418-4 Land Evaluation
GEOG 419-4 Mass Transfer in the Biosphere

Co-operative Education Program

The Department of Geography offers a Co-operative Education Program for students who wish to acquire practical experience. Please refer to the Department of Geography in the Faculty of Arts section of this Calendar.

Management and Systems Science Program
Co-ordinator: Dr. B. Alspach, TLX 10556 Shrum Science Centre, 778.782.4815

Associated Faculty
B. Alspach Mathematics and Statistics, Program Co-ordinator
B. Bhattacharya Computing Science
T. Heaps Economics
E. Love Business Administration
D. Parker Business Administration
L. Weldon Mathematics and Statistics

Advisor
Mrs. M. Fankboner BA (Occidental), MSc (S Fraser), TLX10511 Shrum Science Centre, 778.782.4849/3332

The Department of Mathematics and Statistics, in conjunction with the Faculty of Business Administration, the School of Computing Science and Department of Economics, offers a major and honors program in Management and Systems Science (MSSC) leading to a BSc degree. These are highly structured programs providing a multi-disciplinary approach to the application of quantitative methods to business and industry in an environment of expanding computerization. A seminar in which problems requiring a broad perspective are presented and discussed has been designed for upper level students.

The Co-ordinator of the Management and Systems Science program is selected from the Associated Faculty.

The Management and Systems Science Program co-operates with the School of Computing Science regarding admission to the program. Students must formally apply in order to be admitted into the program. Acceptance will be based on overall academic performance as measured by the cumulative grade point average (CGPA). The CGPA is calculated based on all work completed at Simon Fraser University as described in the General Regulations section.

A student may apply for acceptance into the Management and Systems Science Program during the semester in which she/he is completing all lower level requirements. Transfer and second degree students who have credit for all the lower level requirements may apply for special admission consideration based on transcripts from other post-secondary institutions.

To remain in the program, students must maintain a CGPA of 2.50 Interested students are strongly recommended to contact the program advisor or co-ordinator as soon as possible regarding admission and scheduling.

Undergraduate courses
Course descriptions for all Management and Systems Science undergraduate courses.

Major Program
- Under University regulations a general degree requires a minimum of 44 upper division credit hours in courses numbered 300 and above, completion of at least 120 credit hours, and completion of the major program.
- Six elective credit hours must be completed in courses taken from outside the Faculty of Business Administration, School of Computing Science, Departments of Economics and Mathematics and Statistics.
Completion of all lower and upper division courses shown below is required. However, students should be aware of the requirements for entrance into Business Administration, Computing Science and Economics courses. Contact those departments for further information.

**Lower Division Requirements**

Business Administration  
*one of*  
BUS 207-3 Managerial Economics  
ECON 301-5 Intermediate Microeconomic Theory

*plus all of*  
BUS 251-3 Financial Accounting I  
Computing Science  
BUS 272-3 Behavior in Organizations

Computing Science  
CMPT 101-4 Modula 2  
CMPT 105-3 Fundamental Concepts of Computing  
CMPT 201-4 Data and Program Organization  
CMPT 275-3 Software Engineering

Economics  
ECON 103-3 Principles of Economics (I) Microeconomics  
ECON 105-3 Principles of Economics (II) Macroeconomics

Mathematics and Computing Science  
MACM 101-3 Discrete Mathematics I  
MACM 201-3 Discrete Mathematics II

Mathematics and Statistics  
MATH 151-3 Calculus I  
MATH 152-3 Calculus II  
MATH 232-3 Elementary Linear Algebra  
MATH 251-3 Calculus III  
STAT 270-3 Introduction to Probability and Statistics

**Upper Division Requirements**

For the BSc degree in Management and Systems Science, all of the upper division courses listed below are required.

Students must take a minimum of 34 upper division hours such that at least nine hours are taken from each of the groups under Business Administration (excluding ECON 301), Computing Science, and Mathematics and Statistics. Those hours taken beyond 34 can be applied to other major or minor programs.

Business Administration  
BUS 343-3 Introduction to Marketing  
BUS 364-3 Information Systems in Organization and Society  
BUS 473-5 Operations Management

Computing Science  
CMPT 305-3 Computer Simulation and Modelling  
CMPT 307-3 Data Structures and Algorithms  
CMPT 354-3 File and Database Structures  
CMPT 370-3 Information System Design
Economics

one of
ECON 301-5 Intermediate Microeconomic Theory
BUS 307-3 Managerial Economics

Mathematics and Statistics
MATH 308-3 Linear Programming
MATH 343-3 Combinatorial Aspects of Computing
MATH 408-3 Discrete Optimization
STAT 330-3 Linear Models in Applied Statistics I

Management and Systems Science
MSSC 480-1 Undergraduate Seminar in Management and Systems Science
MSSC 481-1 Undergraduate Seminar in Management and Systems Science

Note the prerequisites for these courses.

Note: BUEC 232, BUEC 333 and ECON 331 will not be accepted towards the 120 or 132 hours required for the MSSC major or honors degree.

Honors Program

- Under University regulations, an honors degree requires completion of a minimum of 60 upper division credit hours in courses numbered 300 and above, including at least 50 upper division credit hours in the honors program, and completion of at least 132 credit hours. Honors students require a graduation grade point average of not less than 3.00.
- Students must complete all of the requirements as specified above for the degree with the major program. In addition, the student must complete the following upper division courses, bringing the total to 61 semester hours.

both of
CMPT 405-3 Design and Analysis of Computing Algorithms
STAT 350-3 Linear Models in Applied Statistics II

and one of
MATH 443-4 Combinatorial Theory
MATH 445-3 Introduction to Graph Theory

- Students must also complete at least three credit hours in Business Administration or in Economics at the 400 division.

For major or honors students, the following upper division are recommended.
BUS 312-4 Business Finance
BUS 488-3 Human Relations in Business
CMPT 405-3 Design and Analysis of Computing Algorithms
BUEC 396-3 The Structure of Industry
ECON 431-5 Intermediate Mathematical Economics
MACM 316-3 Numerical Analysis I
MATH 310-3 Introduction to Ordinary Differential Equations
MATH 443-4 Combinatorial Theory
STAT 410-3 Statistical Analysis of Sample Surveys
STAT 430-3 Statistical Design and Analysis of Experiments
STAT 450-3 Statistical Theory

Co-operative Education Program
Students in the Management and Systems Science program are encouraged to enter Co-operative Education, a program which integrates work experience with academic study. For further details, students should refer to the Co-operative Education section of this Calendar.
MSSC Co-op students work in a variety of environments with both private and public sector employers. Past work term duties include modelling, application programming, marketing end-user support, MIS, and systems analysis.

Students should contact the Mathematical Sciences Co-op Co-ordinator at 778.782.4123, TLX 10507, for admission requirements and information.

Management and Systems Science

Faculty of Science
See also courses listed under Economics (ECON), Business Administration (BUS), Computing Science (CMPT) and Mathematics (MATH) and Statistics (STAT).

MSSC 480-1/481-1 Undergraduate Seminar in Management and Systems Science

A seminar for students undertaking a major or an honors program in Management and Systems Science. (Seminar) Prerequisites: completion of all required lower division courses and at least 15 upper division credits required in the program.

Mathematical Physics Program

Associated Faculty
A. Das Mathematics and Statistics
L. Jorgenson Mathematics and Statistics
G. Kirczenow Physics
M. Plischke Physics

Advisors
Dr. L.H. Palmer, P8433 Shrum Science Centre, 778.782.4844
Mrs. M. Fankboner BA (Occidental), MSc (SFraser), TLX10511 Shrum Science Centre, 778.782.4849

This honors program is offered jointly by the Departments of Mathematics and Statistics and Physics. Entry requires permission of both departments. Graduates from this program may do graduate work in Mathematics or Physics; depending on the student's interest. A small amount of additional work in either Mathematics or Physics may be required. Interested students are strongly advised to contact Dr. Palmer as soon as possible to schedule their programs.

Undergraduate courses
Information on MATH and PHYS undergraduate courses.

Honors Program

Lower Division Requirements
(total 43 semester hours)

CMPT 102-3 Introduction to FORTRAN for Science Students
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 242-3 Introduction to Analysis
MATH 251-3 Calculus III
MATH 252-3 Vector Calculus
PHYS 120-3 Modern Physics and Mechanics
PHYS 121-3 Optics, Electricity and Magnetism
PHYS 131-2 General Physics Laboratory B
PHYS 211-3 Intermediate Mechanics
PHYS 221-3 Intermediate Electricity and Magnetism
PHYS 233-2 Introductory Physics Laboratory A
PHYS 234-3 Introductory Physics Laboratory B  
PHYS 244-3 Thermal Physics

**Upper Division Requirements**
(total 63-65 semester hours)

*all of*
- MATH 310-3 Introduction to Ordinary Differential Equations
- MATH 313-3 Differential Geometry
- MATH 320-3 Advanced Calculus of One Variable
- MATH 322-3 Complex Variables
- MATH 361-3 Mechanics of Deformable Media
- MATH 418-3 Partial Differential Equations

*five of*
- MACM 316-3 Numerical Analysis I
- MATH 362-3 Fluid Mechanics I
- MATH 415-3 Ordinary Differential Equations
- MATH 416-3 Numerical Analysis II
- MATH 419-3 Linear Analysis
- MATH 424-3 Applications of Complex Analysis
- MATH 425-3 Introduction to Metric Spaces
- MATH 426-3 Introduction to Lebesgue Theory
- MATH 438-3 Linear Algebra
- MATH 439-3 Introduction to Algebraic Systems
- MATH 444-3 Topology
- MATH 462-3 Fluid Mechanics
- MATH 466-4 Tensor Analysis
- MATH 467-3 Vibrations
- MATH 468-4 Continuum Mechanics
- MATH 470-3 Variational Calculus
- MATH 471-3 Special Relativity
- STAT 380-3 Introduction to Stochastic Processes

*with at least three courses from the 400 level.*

*all of*
- PHYS 325-3 Relativity and Electromagnetism
- PHYS 345-3 Statistical Physics
- PHYS 355-3 Optics
- PHYS 384-3 Methods of Theoretical Physics I
- PHYS 385-3 Quantum Physics
- PHYS 413-3 Advanced Mechanics
- PHYS 415-3 Quantum Mechanics
- PHYS 425-3 Electromagnetic Theory

*one of*
- PHYS 331-3 Electronics Laboratory(a)
- PHYS 332-3 Intermediate Laboratory

*one of*
- PHYS 465-3 Solid State Physics
- PHYS 484-3 Nonlinear Physics
- NUSC 442-3 Subatomic Physics
- NUSC 485-3 Particle Physics

(a) The requirement that PHYS 326 must precede or be taken concurrently with PHYS 331 may be waived with the permission of the Department of Physics.
**Other Requirements**

Students must complete nine hours of electives outside the Faculty of Science (excluding EDUC 401 to 407) including six hours from the Faculty of Arts.

Further elective credit in any division is required to total 132 semester hours. It is recommended that CHEM 102 and 103 be taken in the electives.

Further requirements for the BSc (Honors) degree are shown in the Faculty of Science section of this Calendar.

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**Mathematics Undergraduate Courses**

**Faculty of Science**

See also courses listed under Actuarial Mathematics (ACMA), Mathematics and Computing Science (MACM) and Statistics (STAT).

Open Workshops for MATH Courses  
(see courses marked with ** below)

Some introductory and service courses are organized through the department's open workshops. In addition to regularly scheduled lectures, students registered in these courses are encouraged to come to the workshops for assistance with problems and questions any time during posted working hours. At the workshop students will have the opportunity to meet with the co-ordinator, the teaching assistants and other students, and work together to understand mathematics in a friendly and helpful environment.

Basic Mathematics: TLX 9507; courses 100,110,190; Dr. M. Dubiel

Calculus and Linear Algebra; TLX 9505, courses 151,152,232; Mrs. T. Berggren

Applied Calculus: TLX 9503; courses 154,155,157,158; Dr. J.C. Arya

Downtown sections of these courses are not scheduled through the workshops but have regularly scheduled tutorials.

Beginning Level Requirements in Mathematics  
Students considering registering in a mathematics courses who do not have BC Math 11 (or equivalent) with at least a grade of C must see the co-ordinator of the Basic Math Workshop. These students may take the non-credit course, Basic Algebra, offered through Continuing Studies.

The prerequisites for the first mathematics courses are as follows.

MATH 100,110,113,190 BC Math 11 (or equivalent) with a grade of at least C or permission of the department or the non-credit course, Basic Algebra, offered through Continuing Studies

MATH 157: BC Math 12 (or equivalent) with a grade of at least B; or MATH 110 with a grade of at least C-; or (with permission of the department) MATH 100 with a grade of at least C-

MATH 151,154: BC Math 12 (or equivalent) with a grade of at least B or MATH 100 with a grade of at least C-

MATH 144: BC Math 12 (or equivalent) or MATH 100 with a grade of at least C-

Students who are unsure of their level of preparation are strongly encouraged to take the free Math Assessment Test at the Basic Math Workshop, TLX 9507, the Evening Resource Centre P9310 (if the Workshop is closed) or Simon Fraser University at Harbour Centre.
Minimum Grade Requirement in Prerequisites for Later MATH Courses

Students enrolled in courses offered by the Mathematics and Statistics Department must have obtained grades of C- or better in prerequisite courses.

Some experience with a high level programming language is recommended by the beginning of the second year.

Courses marked with an asterisk (*) are intended to be particularly accessible to students who are not specializing in Mathematics.

No student may take, for further credit, any course offered by the Department of Mathematics and Statistics which is a prerequisite for a course the student has already completed with a grade of C- or higher, without permission of the department.

*MATH 100-3 Pre calculus
Algebraic, exponential, logarithmic and trigonometric functions and their graphs. Conic sections, applications. (3-0-1**) Prerequisite: see above table. This course may not be taken for credit by students who already have credit for any Mathematics course for which this course (or BC Math 12) is a prerequisite. Students may not count more than one of MATH 100 or 110 for credit. MATH 100 may not be counted towards the Mathematics minor, major or honors degree requirements.

*MATH 110-3 Introductory Mathematics for the Social and Management Sciences
Linear and quadratic functions, sequences and sums, compound interest, exponential and logarithmic functions, counting techniques, probability. (3-0-1**) Prerequisite: see above table. This course may not be taken for credit by students who already have credit for any Mathematics course for which this course (or BC Math 12) is a prerequisite. Students may not count more than one of MATH 100 and 110 for credit. MATH 110 may not be counted towards the Mathematics minor, major or honors degree requirements.

*MATH 113-3 Euclidean Geometry
Plane Euclidean geometry, congruence and similarity. Theory of parallels. Polygonal areas. Pythagorean Theorem. Geometrical constructions. (3-1-0) Prerequisite: see above table.

*MATH 144-3 Introduction to Pure Mathematics
An introduction to proofs and techniques of proofs such as mathematical induction. The fundamental notions of modern Pure Mathematics such as logic, sets, functions and relations. (3-1-0) Prerequisite: see above table.

*MATH 151-3 Calculus I
Functions and graphs, conic sections, limits and continuity, derivatives, techniques and applications of differentiation, trigonometric functions, logarithms and exponentials, extrema, the mean value theorem and polar co-ordinates. (3-0-1**) Prerequisite: see above table. Students with credit for either MATH 154 or 157 may not take MATH 151 for further credit.

*MATH 152-3 Calculus II
Integrals, techniques and applications of integration, approximations, sequences and series, area and arc length in polar coordinates. (3-0-1**) Prerequisite: MATH 151 or 154; or MATH 157 with a grade of A or B. Students with credit for MATH 155 or 158 may not take MATH 152 for further credit.

*MATH 154-3 Calculus I for the Biological Sciences
This course is 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. (3-0-1**) Prerequisite: see above table. Students with credit for either MATH 151 or 157 may not take MATH 154 for further credit.

*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. (3-0-1**) Prerequisite: MATH 151 or 154; or MATH 157 with a grade of A or B. Students with credit for MATH 152 or 158 may not take MATH 155 for further credit.
*MATH 157-3 Calculus for the Social Sciences I
This course is designed for students specializing in business or the social sciences. Topics include: limits, growth rate and the derivative; logarithmic and exponential functions and their application to business, economics, optimization and approximation methods; functions of several variables. (3-0-1**) Prerequisite: see above table. Students with credit for either MATH 151 or 154 may not take MATH 157 for further credit.

*MATH 158-3 Calculus for the Social Sciences II
Theory of integration and its applications; introduction to differential equations with emphasis on some special first-order equations and their applications to economics and social sciences; algebraic operations with matrices, systems of linear equations, determinants, introduction to linear programming. (3-0-1**) Prerequisite: MATH 151 or 154 or 157. Students with credit for MATH 152 or 155 may not take MATH 158 for further credit.

MATH 161-0 Honors Supplement for Calculus I
The class meets one hour each week. Students will spend most of the time working on challenging problems relating to the material of MATH 151, Calculus I but will also have the opportunity to investigate many different areas of mathematics. (0-1-0) Prerequisite: a grade of A or better in Math 12 (or equivalent) or a grade of A or better in MATH 151 or permission of the Department. This course will be graded on a Pass/No Entry basis.

MATH 162-0 Honors Supplement for Calculus II
The class meets one hour each week. Students will spend most of the time working on challenging problems relating to the material of MATH 152 Calculus II, but will also have the opportunity to investigate many different areas of mathematics. (0-1-0) Prerequisites: a grade of A or better in MATH 151 or its equivalent and a grade of Pass in MATH 161 or permission of the instructor. This course will be graded on a Pass/No Entry basis.

MATH 171-1 Computer Explorations in Calculus I
This supplement to MATH 151/154/157 gives students the opportunity to explore and investigate the underlying principles of differential calculus using leading edge computer software currently used in mathematical and scientific research and industry. Previous experience with computers would be beneficial, but it is not required. (1-0-2**) Prerequisite: BC Math 12 (or equivalent) with a grade of at least B or MATH 100 with a grade of at least C. Corequisite: MATH 151, 154 or 157. Other students may register with special permission.

MATH 172-1 Computer Explorations in Calculus II
This supplement to MATH 152/155/158 gives students the opportunity to explore and investigate the underlying principles of integral calculus using leading edge computer software currently used in mathematical and scientific research and industry. Previous experience with computers would be beneficial, but it is not required. Prerequisite: MATH 151, 154 or 157. Corequisite: MATH 152, 155, or 158. Other students may register with special permission.

*MATH 190-4 Principles of Mathematics for Teachers
Mathematical ideas involved in number systems and geometry in the elementary school curriculum. Whole number, fractional number, and rational number systems. Plane geometry, solid geometry, metric geometry, and motion geometry. (4-0-1**) Prerequisite: see above table. This course may not be counted toward the Mathematics minor, major or honors degree requirements. Candidates for degrees in the Faculty of Science may not use this course for the satisfaction of degree requirements. Students who have taken, have received transfer credit for, or are currently taking MATH 151, 154 or 157 may not take MATH 190 for credit without permission from the Mathematics and Statistics Department.

MATH 198-3 Selected Topics in Mathematics
Topics in areas of mathematics and statistics not covered in the regular undergraduate curriculum of the department. (3-1-0) Prerequisite: dependent on the topic covered.

MATH 232-3 Elementary Linear Algebra
Matrix arithmetic, linear equations, and determinants. Real vector spaces and linear transformations. Inner products and orthogonality. Eigenvalues and eigenvectors. (3-0-1**) Prerequisite: MATH 151 or 154 or 157.
MATH 242-3 Introduction to Analysis
Mathematical induction. Limits of real sequences and real functions. Continuity and its consequences. The Mean Value Theorem. The Fundamental Theorem of Calculus. Series. (3-1-0) Prerequisite: MATH 152 or 155.

MATH 243-3 Discrete Mathematics
Induction, elementary counting, pigeon-hole principle, generating functions and recurrence relations, graphs and trees, partially ordered sets. (3-1-0) Prerequisites: MATH 152 or 155; or MATH 158 with a grade of at least B.

MATH 251-3 Calculus III
Vectors, solid analytic geometry, differential calculus of several variables, multiple integrals, cylindrical and spherical coordinates, line integrals. (3-1-0) Prerequisite: MATH 152 or 155; or MATH 158 with a grade of A or B. It is recommended that MATH 232 be completed before this course is attempted.

MATH 252-3 Vector Calculus
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. (3-1-0) Prerequisites: MATH 232 and 251. Students with credit for MATH 312 may not take MATH 252 for further credit.

MATH 262-4 Engineering Mechanics I
Vectors. Reduction of force systems, equipollent systems of forces. Plane statics, free body diagram, trusses, frames, friction. Statics in space. Beams and cables. Centroids. Second moments of areas. (3-2-0) Prerequisites: MATH 152 (preferably) or 155 must precede or be taken concurrently; and PHYS 120.

MATH 263-4 Engineering Mechanics II
Newton's laws. Moments of inertia. Principles of dynamics; work and energy. Kinematics and kinetics of rigid bodies, plane motion of rigid bodies. (Dynamics of rigid bodies is the topic for this course.) (3-2-0) Prerequisites: MATH 262; MATH 251 (or 253) must precede or be taken concurrently. MATH 262 may be waived with the permission of the department. Students may not count more than one of MATH 263 or PHYS 212 for credit.

MATH 291-2, 292-3 Selected Topics in Mathematics
The topics included in these courses will vary from semester to semester, depending on faculty availability and student interest. (2-1-0), (3-1-0) Prerequisites will be specified according to the particular topic or topics offered. Each course may not count more than once toward degree requirements.

*MATH 308-3 Linear Programming
Theory and applications of linear programming, geometric and computational considerations, networks, applications of duality. (3-1-0) Prerequisite: MATH 232. Recommended: MATH 243 or MACM 201.

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. (3-1-0) Prerequisites: MATH 232 and 251; MATH 308 is recommended.

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. (3-1-0) Prerequisite: MATH 152 or 155; or MATH 158 with a grade of A or B. It is strongly recommended that MATH 232 be completed before this course is attempted.

MATH 313-3 Differential Geometry
Curvature and torsion for space curves, Frenet formulae, tangents and normals to surfaces, curvatures of a surface, special points and curves on surfaces, calculus on surfaces. (3-1-0) Prerequisite: MATH 252.
MATH 314-3 Boundary Value Problems
Separation of variables for the conduction equation, the wave equations and Laplace's equation. Sturm-Liouville problems. Separation in polar co-ordinates. Laplace transforms. (3-1-0) Prerequisites: MATH 252 (or 253) and 310.

MATH 320-3 Advanced Calculus of One Variable
Sequences and series of functions; uniform convergence; consequences of uniform convergence; improper integrals; additional applications of convergence. (3-1-0) Prerequisites: MATH 242 and 251.

MATH 322-3 Complex Variables
Functions of a complex variable, differentiability, contour integrals, Cauchy's theorem, Taylor and Laurent expansions, method of residues. (3-1-0) Prerequisite: MATH 251. Students with credit for MATH 422 may not take MATH 322 for further credit.

MATH 332-3 Introduction to Applied Algebraic Systems
An introduction to groups, rings and fields with applications to cryptography, codes and counting techniques based on permutation groups. (Lecture/Tutorial) Prerequisites: MATH 232.

MATH 336-0 Job Practicum I
This is the first semester 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. Prerequisite: Students must apply to and receive permission from the Department of Mathematics and Statistics at least one semester in advance. They will normally be required to have completed 45 semester hours of credit with a GPA of 2.5. This course will be graded on a pass/withdraw basis. A course fee is required.

MATH 337-0 Job Practicum II
This is the second semester of work experience in a Co-operative Education program available to Mathematics students. Prerequisites: MATH 336 and permission of the Co-op Co-ordinator; students must apply at least one semester in advance. This course will be graded on a pass/withdraw basis. A course fee is required.

MATH 339-3 Groups and Symmetry
Symmetries, groups, subgroups and generators, isomorphisms, dihedral groups, matrix groups, products, Cayley's Theorem, Lagrange's Theorem and Cauchy's Theorem. (Lecture) Prerequisite: MATH 232.

MATH 342-3 Elementary Number Theory
Divisibility of primes, congruences, arithmetic functions and related topics. Prerequisite: any 200 level MATH or MACM course. (3-0-0)

MATH 343-3 Applied Discrete Mathematics
Discrete modelling, generation of combinatorial objects, matching theory, scheduling, applications of graphs. (3-1-0) Prerequisite: MATH 243 or MACM 201. A computing language is recommended.

MATH 361-3 Mechanics of Deformable Media
Analysis of deformation and stress and an introduction to constitutive equations for different materials. (3-1-0) Prerequisites: MATH 252 (or 253) and MATH 262 (or PHYS 120 with permission of the department).

MATH 380-3 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. (3-1-0) Prerequisites: MATH 151, 232 and one of 152 or 113. Students who have taken MATH 180 may not take MATH 380 for additional credit.

MATH 398-3 Selected Topics in Mathematics
Topics in areas of mathematics and statistics not covered in the regular undergraduate curriculum of the department. (3-1-0) Prerequisite: dependent on the topic covered.
MATH 408-3 Discrete Optimization
Modelling techniques, integer programming, network flows, dynamic programming, and combinatorial max-min relations.
Computational aspect of the preceding. (3-1-0) Prerequisite: MATH 308 and 343. (MATH 343 may be taken concurrently.)

MATH 415-3 Ordinary Differential Equations
Existence and uniqueness theorems, Green's functions for second order equations, plane autonomous systems, stability, expansions about ordinary and singular points. (3-0-0) Prerequisites: MATH 310; 314 and 322 are recommended.

MATH 416-3 Numerical Analysis II
The numerical solution of ordinary differential equations and elliptic, hyperbolic and parabolic partial differential equations will be considered. (3-0-0) Prerequisites: MATH 310 (or 352) and MACM 316.

MATH 418-3 Partial Differential Equations
First-order equations, the wave equations, characteristics, Riemann's method, Laplace's equation, Green's and Neumann's functions, Poisson formula. (3-0-0) Prerequisites: MATH 310 (or PHYS 384) or permission of the department. MATH 313 is recommended.

MATH 419-3 Linear Analysis
Convergence in Euclidean spaces, Fourier series and their convergence, Legendre polynomials, Hermite and Laguerre polynomials. (3-0-0) Prerequisites: MATH 232, 251 and 310. MATH 314 and 320 are recommended.

MATH 424-3 Applications of Complex Analysis
Conformal mapping, application to boundary value problems, Schwarz-Christoffel transformation, integral formulas, analytic continuation, argument principle. (3-0-0) Prerequisite: MATH 322.

MATH 425-3 Introduction to Metric Spaces
Metric spaces, convergence in metric spaces, continuity, compactness, connectedness and completeness, contraction mapping principle, and other useful theorems. (3-0-0) Prerequisite: MATH 320.

MATH 426-3 Introduction to Lebesgue Theory
An introduction to the Lebesgue integral and some of its applications. (3-0-0) Prerequisite: MATH 320.

MATH 436-0 Job Practicum III
This is the third semester of work experience in a Co-operative Education program available to Mathematics students. Prerequisites: MATH 337 and permission of the Co-op Co-ordinator; students must apply at least one semester in advance. This course will be graded on a pass/withdraw basis. A course fee is required.

MATH 437-0 Job Practicum IV
This is the fourth semester of work experience in a Co-operative Education program available to Mathematics students. Prerequisites: MATH 436 and permission of the Co-op Co-ordinator; students must apply at least one semester in advance. This course will be graded on a pass/withdraw basis. A course fee is required.

MATH 438-3 Linear Algebra
Linear Algebra. Vector space and matrix theory. (3-1-0) Prerequisite: MATH 332 or 339 or permission of the instructor.

MATH 439-3 Algebraic Systems
Algebraic systems including, for example, groups, rings. Polynomial theory. Prerequisite: MATH 332. (3-0-0)

MATH 440-3 Galois Theory
An introduction to the theory of fields, with emphasis on Galois theory. (3-0-0) Prerequisites: MATH 332.

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. (3-0-0) Prerequisites: MATH 232; MATH 243 or MACM 201.
MATH 444-3 Topology
Development of elementary theory of topological spaces. (3-0-0) Prerequisite: MATH 425, or permission of the department.

MATH 445-3 Introduction to Graph Theory
Connectivity, Eulerian graphs, Hamiltonian graphs, planar graphs, matchings, vertex coloring, and applications of graphs. (3-0-0) Prerequisite: MATH 243 or MACM 201.

MATH 447-4 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. (4-0-0) Prerequisite: MATH 232; MATH 439 is recommended.

MATH 451-3 Mathematical Logic
Introduction to the theory of formal systems and to the theory of recursion. (3-1-0) Prerequisite: fifth level standing preferably with some Mathematics courses at the 400 division.

MATH 452-3 Set Theory
Introduction to Zermelo Fraenkel set theory. (3-0-0) Prerequisite: MATH 242.

MATH 462-3 Fluid Dynamics
Kinematics, Navier-Stokes equations of motion, viscous flows, dynamical similarity, Reynolds number, Boundary layer theory. (3-0-0) Prerequisite: MATH 361; MATH 314 (or PHYS 384) should precede or be taken concurrently.

MATH 466-3 Tensor Analysis
Tensors, Riemannian space, applications to classical dynamics, hydrodynamics and elasticity. (3-1-0) Prerequisite: MATH 252. MATH 313 is recommended.

MATH 467-3 Vibrations
Vibrations of discrete systems with many degrees of freedom; matrix methods. Non-linear vibrations; the phase plane; singular points and limit cycles. Perturbation methods; singular perturbation expansions. (3-0-0) Prerequisites: MATH 232 and 310. MATH 263 (or PHYS 211) and MATH 314 are recommended.

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. (3-1-0) Prerequisites: MATH 310 and either MATH 262 or PHYS 211. MATH 313 or PHYS 384 should precede or be taken concurrently.

MATH 471-3 Special Relativity
Space-time continuum, separation between events. Lorentz transformation. Mechanics of discrete system and of continuum. Electromagnetic field in vacuo. (3-1-0) Prerequisites: MATH 313 or PHYS 384.

MATH 491-2 Honors Essay
Selected topics. Prerequisite: written permission of the Department Undergraduate Studies Committee.

MATH 492-4, 493-4, 494-4, 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 495-4, 496-4, 498-3 Selected Topics in Mathematics
The topics included in these courses will vary from semester to semester depending on faculty availability and student interest. (4-1-0), (4-1-0), (3-1-0) Prerequisites: will be specified according to the particular topic or topics offered under these course numbers.
Mathematics and Computing Science Program

Advisors
Dr. P. Hell, 10837 Applied Sciences Building, 778.782.3391

Mrs. M. Fankboner BA (Occidental), MSc (S Fraser), TLX10511 Shrum Science Centre, 778.782.4849

Mrs. E. Krbavac, 9985 Applied Sciences Building, 778.782.4675

This honors program is offered jointly by the Department of Mathematics and Statistics and the School of Computing Science. Entry requires permission of both. Graduates from this program may proceed to graduate work in either Mathematics or Computing Science. Depending on the particular area of interest of the student, a small amount of additional undergraduate work in either Mathematics or Computing Science may be required. Students interested in this program are strongly recommended to contact Maggie Fankboner as soon as possible regarding the scheduling of this program.

Undergraduate courses
Course descriptions for all Mathematics and Computing Science undergraduate courses.

Joint Honors Program
A minimum of 132 semester hours, as specified below, is required.

Lower Division Requirements
CMPT 101-4 Modula 2
CMPT 105-3 Fundamental Concepts of Computing
CMPT 201-4 Data and Program Organization
CMPT 205-3 Introduction to Formal Topics in Computing Science
CMPT 275-4 Software Engineering
CMPT 290-3 Introduction to Digital Systems
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 242-3 Introduction to Analysis
MATH 243-3 Discrete Mathematics
MATH 251-3 Calculus III
PHIL 214-3 Axiomatic Logic
STAT 270-3 Introduction to Probability and Statistics
and either a 100-division English course or PHIL 001

Note 1: A student who, in satisfaction of upper division requirements (see below), wishes to use group d) as one of the two upper division required groups taken from the list a), b), c), d), must also obtain credit for the lower division course MATH 252.

Note 2: A student wishing to use courses from group a) to satisfy requirements is advised that STAT 280 is a prerequisite for STAT 380.

Upper Division Requirements
MACM 316-3 Numerical Analysis I
CMPT 307-3 Data Structures and Algorithms
CMPT 320-3 Social Implementation of a Computerized Society
CMPT 354-3 Database Systems I
CMPT 390-3 Digital Circuits and Systems
CMPT 405-3 Design and Analysis of Computing Algorithms

- The required courses in each of two of the groups a), b), c), d) below and in at least two of the groups e), f), g), h), i) below.
• Additional courses as required taken from any of the lists a) - k) below to bring the total upper division credits in MATH or STAT to at least 25 and the total credits in upper division CMPT to at least 25 where, for this purpose, credit obtained in MACM courses is divided evenly between MATH and CMPT.
• additional courses as required to bring the total number of upper division credits to at least 60.

a) Statistics

Required courses
STAT 330-3 Linear Models in Applied Statistics I
STAT 380-3 Introduction to Stochastic Processes
STAT 350-3 Linear Models in Applied Statistics II

Other courses
STAT 402-3 Generalized Linear and Nonlinear Modelling
STAT 420-3 Non-Parametric Statistics
STAT 450-3 Statistical Theory

b) Discrete Mathematics

Required courses
MATH 308-3 Linear Programming

and two of
MATH 343-3 Combinatorial Aspects of Computing
MATH 408-3 Discrete Optimization
MATH 443-3 Combinatorial Theory
MATH 445-3 Introduction to Graph Theory

c) Numerical Analysis

Required courses
MATH 310-3 Introduction to Ordinary Differential Equations
MATH 416-3 Numerical Analysis II

d) Applied Mathematics

Required courses
MATH 310-3 Introduction to Ordinary Differential Equations

and two of
MATH 314-3 Boundary Value Problems
MATH 362-3 Fluid Mechanics I
MATH 415-3 Ordinary Differential Equations
MATH 418-3 Partial Differential Equations
MATH 470-3 Variational Calculus

e) Computer Design and Organization

Required course
one of
CMPT 391-3 Microcomputer Hardware Workshop
CMPT 400-3 Hardware Architecture
CMPT 495-3 Digital Systems Design and Specification Laboratory I
CMPT 499-3 Special Topics in Computer Hardware

Other courses
CMPT 490-3 VLSI Systems Design
CMPT 496-3 Digital Systems Implementation Laboratory
f) Computing Systems
Required course
one of
CMPT 300-3 Operating Systems I
CMPT 371-3 Data Communications and Networking

Other courses
CMPT 401-3 Operating Systems
CMPT 402-3 Operating Systems Software Laboratory
CMPT 479-4 Special Topics in Computing Systems

g) Programming Languages and Software
Required course
one of
CMPT 383-3 Comparative Programming Languages
CMPT 384-3 Symbolic Computing

Other courses
CMPT 480-3 Foundations of Programming Languages
CMPT 481-3 Functional Programming
CMPT 487-3 Software Engineering Tools and Environments
CMPT 489-3 Special Topics in Programming Languages

h) Information Systems
Required course
one of
CMPT 301-3 Information Systems Management
CMPT 370-3 Information System Design
CMPT 454-3 Database Systems II
CMPT 459-3 Special Topics in Database Systems

Other courses
CMPT 302-3 System Development Projects

i) Artificial Intelligence
Required course
one of
CMPT 410-3 Artificial Intelligence Survey
CMPT 412-3 Computational Vision
CMPT 413-3 Computational Linguistics

Other courses
CMPT 411-3 Knowledge Representation
CMPT 414-3 Model Based Computer Vision
CMPT 419-3 Special Topics in Artificial Intelligence

j) Theoretical Computing Science
CMPT 406-3 Computational Geometry
CMPT 409-3 Special Topics in Theoretical Computing Science
MACM 300-3 Introduction to Formal Language and Automata with Applications
k) Intensive Applications
CMPT 305-3 Computer Simulation and Modelling
CMPT 340-3 Computers in Biomedicine
CMPT 361-3 Introduction to Computer Graphics
CMPT 363-3 Graphical User Interfaces
CMPT 461-3 Interactive Graphics and Animation Systems
CMPT 468-3 Scientific Visualization

General Requirements

The program is subject to the general regulations of the Faculty of Science and of the University. Admission to courses and requirements relating to satisfaction of prerequisites are subject to the requirements of the departments offering the courses. Admission to and continuation in the program is subject to the obtaining of and maintenance of an overall GPA of at least 3.00.

Mathematics and Computing Science

Faculties of Applied Sciences and Science
See also courses listed under Mathematics (MATH), Computing Science (CMPT) and Statistics (STAT).

Minimum Grade Requirement
Students wishing to register for Mathematics/Computing Science courses must have obtained grades of C- or better, in prerequisite courses. Students will not normally be permitted to enrol in any MACM course for which a D grade or lower was obtained in any prerequisite. No student may take, for further credit, any course offered by the Department of Mathematics and Statistics which is a prerequisite for a course the student has already completed with a grade of C- or higher, without permission of the department.

MACM 101-3 Discrete Mathematics I
Introduction to counting, induction, automata theory, formal reasoning, modular arithmetic. (Lecture) Prerequisite: BC high school Math 12

MACM 201-3 Discrete Mathematics II
A continuation of MACM 101. Topics covered include graph theory, trees, relations, asymptotics, generating functions and recurrence relations. Prerequisite: MACM 101.

MACM 300-3 Introduction to Formal Languages and Automata with Applications
Languages, grammars, automata and their applications. Turing machines. Computability and undecidability. Complexity theory. (Lecture/Tutorial) Prerequisite: CMPT 205.

MACM 316-3 Numerical Analysis I
A presentation of the problems commonly arising in numerical analysis and the basic methods for their solutions. (Lecture/Tutorial) Prerequisites: MATH 152 or 155 or 158, and 232 and knowledge of PL/1 or FORTRAN (or with permission of the instructor) PASCAL. Students with credit for MATH 406 or MATH 316 may not receive further credit for MACM 316.

Department of Mathematics and Statistics
Location: TLX10512 Shrum Science Centre
Telephone: 778.782.3331/3332, 778.782.4947 Fax
Chair: K. Heinrich BMath, PhD (Ncle NSW)

Professors Emeriti
G. Bojadziev PhD (Sofia Mech Eng Inst)
R. Harrop BA, MA, PhD (Camb)
R.W. Lardner BA, PhD, ScD (Camb)
E.M. Shoemaker BS, MS, PhD (Carnegie Tech.)
M. Singh AB, MA (Punj), MSc, PhD (Brown)
M.A. Stephens BSc (Bristol), AM (Harv), PhD (Tor)
C. Villegas Ing Ind (Uruguay), Gordon M. Shrum Endowed Chair
J.M. Borwein BSc (W Ont), MSc, PhD (Oxf)

Professors
B.R. Alspach BA (Wash), MA, PhD (Calif)
J.L. Berggren BS, MS, PhD (Wash)
P.B. Borwein BSc (W Ont), MSc, PhD (Br Col)
T.C. Brown BA (Reed), AM, PhD (Wash)
A. Das BSc, MSc (Calc), PhD (NUI), DSc (Calc)
G.A.C. Graham BA (Dub), MS (Brown), PhD (Glas)
K. Heinrich BMhth, PhD (N'cle NSW), Chair of Department
P. Hell BSc (Charles Univ Prague), MSc (McM), PhD (Montr)*
A.H. Lachlan BA, MA, PhD (Camb), FRSC
R.A. Lockhart BSc (Br Col), MA, PhD (Calif)
N.R. Reilly BSc, PhD (Glas)
R.D. Routledge BSc (Qu), MSc (Alta), PhD (Dal)
R.D. Russell BS, BA, MA, PhD (New Mexico)
C.Y. Shen BS, MS, PhD (Oregon State)
S.K. Thomason BS (Oregon), PhD (C'nell)
B.S. Thomson BSc (Tor), MA, PhD (Wat)

Associate Professors
D.M. Eaves BS (MIT), MS, PhD (Wash)
A.R. Freedman AB (Calif), PhD (Oregon State)
H. Gerber BS (CCNY), PhD (Penn State)
E. Pechlaner PhD (Vienna)
C. Schwarz BSc, MSc (Manit), MMath (Wat), PhD (Manit)
T.B. Swartz BMhth (Wat), MSc, PhD (Tor)
T. Tang MSc (Beijing), PhD (Leeds)
M.R. Trummer Matura (Austria), Dipl Math, Dr Sc Math (ETH Z'rich)
K.L. Weldon BSc, MSc (Tor), PhD (Stan)

Assistant Professors
C.B. Dean BSc (Sask), MMath, PhD (Wat)
L. Goddyn BSc (S Fraser), MMath, PhD (Wat)
M.C.A. Kropinski BSc (Qu), MMath (Wat), PhD (Rensselaer)
J. Parker BSc, MSc (Laval), PhD (Herriot-Watt, Edin)
D. Ryeburn AB (Kenyon), PhD, (Ohio State)
R.R. Sitter BSc, MSc (Br Col), PhD (Wat)

Adjunct Professors
D. Hare BSc (Vic, BC) MSc (Alta), PhD (S Fraser)
M. Rosenfeld MSc, PhD (Hebrew University of Jerusalem)
J. Vanderwerff MSc, PhD (Alta)
E. Van Vleck BSc (Kansas), MSc (Col), PhD (Georgia Institute of Technology)
M.L. Yu BSc (Fudan, Shanghai), MSc, PhD (S Fraser)
Q. Yu BSc, MSc (Shandong), PhD (S Fraser)

Laboratory Instructors
J.C. Arya BSc (Agra), MA (Panjab), MSc, PhD (S Fraser)
T. Berggren BA (Wash), MSc (S Fraser)
X.Q. Cheng BMhth (Sichuan), MSc (S Fraser)
M.M. Dubiel MA, PhD (Warsaw)
J.S. Hebron BSc (Calg), MSc (Br Col), PhD (Alta)

*joint appointment with Computing Science
Advisor
Mrs. M. Fankboner BA (Occidental), MSc (S Fraser), TLX10511 Shrum Science Centre, 778.782.4849

The Department of Mathematics and Statistics offers a program of study within the Faculty of Science leading to a Bachelor of Science with a major or honors in Mathematics and Statistics. Students interested in a Bachelor of Arts degree in Mathematics and Statistics should refer to the Faculty of Arts. A number of Mathematics courses are considered desirable for students wishing to major or take honors in other disciplines. This applies particularly, though by no means exclusively, to courses in the 100 and 200 series.

Requirements for the Bachelor of Science in Mathematics and Statistics follow.

Programs of Study
Courses fall into four broad areas - Pure, Applied, Statistics and Computational. Students can select varying degrees of emphasis in these areas, but some combinations are more cohesive than others. The Student Guide issued by the department contains valuable information in this regard.

Pure Mathematics courses deal with mathematics for its own sake and includes algebra, analysis, and topology. The subject matter of these courses finds its application both inside and outside mathematics; branches of mathematics which are very beautiful turn out to have unexpected uses, too.

Applied Mathematics courses include those with various useful mathematical techniques as well as those more oriented toward specific areas such as relativity or continuum mechanics. The range of applications can be very wide, from economics to theoretical physics. See Applied Mathematics Program.

The department offers courses in Statistics designed for the user of statistical methods, as well as courses of interest to those who wish to study this branch of mathematics in some detail. Statistics deals with methods useful in the collection and presentation of numerical data obtained from observations. By constructing mathematical models which account for the data, one is able to draw conclusions (inferences) about the problem or situation being analyzed. Students interested in concentrating in Statistics would see the Statistics option below and courses labelled STAT in the Undergraduate Courses.

Computational Mathematics include computational techniques which are used to help solve interesting mathematical problems (such as the courses in numerical analysis) as well as those where mathematical theory is used to help understand the nature of computing (the automata and switching theory courses and some of the discrete mathematics courses, for example). Some courses are taken by students in Computing Science and by Mathematics majors and honors. Some are designated MACM and others MATH.

A Mathematics major or honors student will find it possible to take enough upper division courses in another subject to allow a strong minor in that subject, or even (with careful planning) a major. In addition to such combinations there are several joint programs described in the following sections.

Undergraduate courses
Information on MATH and STAT undergraduate courses.

Co-operative Education
Students in the Mathematics and Statistics program are invited to apply to enter Co-operative Education, a program which integrates work experience with academic study. For further details on the Co-op system, students should refer to the Co-operative Education section in this Calendar.

Mathematical Sciences Co-op students work in a variety of environments with both private and public sector employers. Past work term duties include statistical analysis, end-user support, survey design, application programming, mathematical modeling, and actuarial analysis.

Students should contact the Mathematical Sciences Co-op Co-ordinator (TLX 10507) at 778.782.4123, for admission requirements and information.
Mathematics Major and Honors Program

Students majoring or taking honors in Mathematics for a BA degree are subject to the general regulations of the Faculty of Arts. Students majoring or taking honors in Mathematics for a BSc degree are subject to the general regulations of the Faculty of Science. In either case, students majoring or taking honors in Mathematics will be required by the Department of Mathematics and Statistics

i) To obtain credit for
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 242-3 Introduction to Analysis
MATH 251-3 Calculus III
MATH 252-3 Vector Calculus

and any one of CMPT 101, 102, 103, and any course labelled STAT and three additional hours in lower division Mathematics or Statistics (MATH 100, 110, and 190 may not be included). This requirement would normally be met by the end of the fourth level.

Note: Students who have been or who have intended to be major or honors students in Biological Sciences programs and who have satisfactorily completed MATH 154 or 155 will not take MATH 151 or 152 respectively.

Students who have been or who have intended to be major or honors students in the social sciences and who have satisfactorily completed MATH 157 or 158-3 will not take MATH 151 or 152 respectively.

ii) To obtain at least six semester hours of credit in courses other than Mathematics or Statistics offered by the Faculty of Science. (Physics courses which are recommended for the Applied Mathematics option, as described in the Student Guide issued by the Department of Mathematics and Statistics, may be used for the satisfaction of this requirement.)

iii) A minimum of 12 semester hours of electives in subjects taken outside the Faculty of Science (excluding EDUC 401 to 407) including a minimum of 6 semester hours taken in the Faculty of Arts.

iv) In the case of major students - to obtain a total of at least 44 (BSc) or 45 (BA) semester hours of credit in upper division courses of which at least 30 hours must be in upper division Mathematics or Statistics courses or Mathematics/Computing Science (MACM) courses; Mathematics majors will be required to take at least three 400 division Mathematics or Statistics or Mathematics/Computing Science (MACM) courses, none of which may be a Directed Studies, Job Practicum or Honors Essay course. Neither STAT 301 nor 302 may be counted as part of the 30 hours. A grade point average of 2.00 in the required upper division courses in Mathematics and Statistics is required.

v) In the case of honors students - to obtain a total of at least 60 semester hours of credit in upper division courses, of which at least 50 hours must be in upper division Mathematics or Statistics courses or Mathematics/Computing Science (MACM) courses; Mathematics honors students will be required to take at least five 400 division Mathematics or Statistics or Mathematics/Computing Science (MACM) courses, none of which may be a Directed Studies, Job Practicum or Honors Essay course. Neither STAT 301 nor 302 may not be counted as part of the 50 hours.

To satisfy conditions iv) and v) above, PHYS 413 may be counted as a Mathematics course.

The Department of Mathematics and Statistics also offers a further option for a BSc honors degree in Mathematics which if exercised supersedes requirements i), ii), v) above. The required courses are as follows.

i) All of MATH 151, 152, 232, 242, 251, 252, 310, 313, 314, 320, 322, 361 (note MATH 262 prerequisite), 418. STAT 270, MACM 316. PHYS 120, 121, 211 (or MATH 263), 221, 244, 345, 385, and CMPT 101 or 102 or 103.

ii) At least two of MATH 415*, 416*, 419*, 424*,425, 426, 438*, 439, STAT 380 (*indicates choices which are particularly recommended)
iii) At least five of the following courses.
   a) MATH 462, 466, 467, 468, 470, 471
   b) PHYS 325, 355, 384, 413, 415, 425, 484

with at least two courses taken from each of groups a) and b) above.

The student's choices from the above courses must include at least five courses at the 400 level. In addition, the number of credit hours must total at least 132, of which at least 12 hours must be taken outside the Faculty of Science, including a minimum of six hours taken in the Faculty of Arts and at least 60 hours must be at the upper division.

The package MATH 262, 263 is well suited for students interested in engineering-type problems.

**Mathematics Minor Program**

Students completing a minor in Mathematics are subject to the general regulations of the faculty in which they are registered. Students normally are required by the Mathematics and Statistics Department to

i) obtain at least 11 credit hours for Mathematics or Statistics courses (MATH 100, 110, 190 may not be included) or Mathematics/Computing Science (MACM) courses numbered 101-299 inclusive. These courses normally will include MATH 151 (or 154 or 157), 152 (or 155 or 158), and 232.

ii) obtain credit in at least 15 semester hours of upper division Mathematics (MATH) or Statistics (STAT) or Mathematics/Computing Science (MACM) or Actuarial Mathematics (ACMA) courses. These courses may not include PHYS 413 or STAT 301.

The Department of Mathematics and Statistics plans to offer a sufficient number of courses over a two year period to enable students to complete a minor in Mathematics through evening study.

**Statistics Major and Honors Options**

Students majoring or taking honors in Mathematics with the Statistics option for a BA degree are subject to the general regulations of the Faculty of Arts.

Students majoring or taking honors in Mathematics with a Statistics option for a BSc degree are subject to the Faculty of Science general regulations. In each case, the department requires students obtain credit for the following courses.

(1) Lower Division Mathematics
   MATH 151 (or 154 or 157), 152 (or 155 or 158), 232, 242, 251, and 252

(2) Lower Division Statistics
   STAT 270 and 280

(3) Lower Division Computing CMPT 101 or 102 or 103, or equivalent evidence of competence in computer programming

(4) Upper Division Mathematics/Computing Science
   MACM 316

(5) Upper Division Probability and Statistics
   STAT 330, 350, and 450, and at least three of STAT 402, 410, 420, 430, 440 and 460

(6) Upper Division Auxiliary Concentration
   Students must complete at least 15 upper division credits in a specific field other than Probability and Statistics, Mathematics, Actuarial Mathematics, or Computing Science. Courses are approved by a departmental advisor.

(7) In addition, faculty requirements stipulate that at least three additional upper division courses be taken in Mathematics, Statistics, Actuarial Mathematics or Mathematics/Computing Science. Students are encouraged to consult a departmental advisor before selecting these courses.
(8) In addition to requirements (1) through (6) for a major, candidates for a honors degree in Mathematics with the statistics option will be required to obtain credit for MATH 320, 322, 426, and 438, all of the courses listed under (5) above, and three additional upper division courses labelled MATH, STAT, ACMA or MACM excluding STAT 301 and 302.

Statistics Minor Option
Candidates for a minor in Mathematics and Statistics with the Statistics option are subject to the general regulations of the faculty in which they are registered. In addition they must obtain credit for

all of
MATH 151-3 Calculus I (or 154 or 157)
MATH 152-3 Calculus II (or 155 or 158)
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III
STAT 270-3 Introduction to Probability and Statistics

plus five of
ACMA 315-3 Credibility Theory and Loss Distributions
ACMA 320-3 Actuarial Mathematics I
ACMA 335-3 Risk Theory
ACMA 345-3 Survival Models
* STAT 330-3 Linear Models in Applied Statistics I
* STAT 350-3 Linear Models in Applied Statistics II
STAT 380-3 Introduction to Stochastic Processes
STAT 402-3 Generalized Linear and Nonlinear Modelling
STAT 410-3 Statistical Analysis of Sample Surveys
STAT 420-3 Non-Parametric Statistics
STAT 430-3 Statistical Design and Analysis of Experiments
STAT 440-3 Statistical Quality Control
* STAT 450-3 Statistical Theory
STAT 460-3 Decision Analysis and Bayesian Inference

*recommended

Certificate in Actuarial Mathematics
This certificate program prepares the student for most of the Society of Actuaries Associateship examinations (SOA courses 100 through 165) or the Casualty Actuarial Society Associateship examinations (part 1 through 4). To obtain the certificate, the following courses must be completed.

ACMA 310-3 Mathematics of Compound Interest
ACMA 320-3 Actuarial Mathematics I
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
STAT 270-3 Introduction to Probability and Statistics
STAT 280-3 Applied Probability Models

four of
ACMA 315-3 Credibility Theory and Loss Distributions
ACMA 325-3 Actuarial Mathematics II
ACMA 335-3 Risk Theory
ACMA 345-3 Survival Models
ACMA 355-3 Graduation of Life Tables
ACMA 365-3 Mathematics of Demography

one of
MACM 316-3 Numerical Analysis I
STAT 330-3 Linear Models in Applied Statistics I
Note: students completing the above courses who are also enrolled in either a major or minor program in Mathematics may count these MATH, MACM, or STAT courses both toward the Certificate in Actuarial Mathematics and for their major or minor program in Mathematics. The ACMA courses may be used to satisfy upper division requirements for a minor in Mathematics, a minor in Statistics or a major in Statistics.

Other Programs

Engineering Transfer Program
The Department of Mathematics and Statistics participates in the Engineering Transfer program. For details, consult the Student Guide issued by the Department of Mathematics and Statistics and the Faculty of Science section.

Management and Systems Science Program
The Department of Mathematics and Statistics contributes to the BSc degree program in Management and Systems Science. For details, see the Faculty of Science section.

Mathematical Physics Honors Program
This honors program is offered jointly with the Department of Physics. It consists of theoretical and laboratory courses in Physics together with applied and pure courses in Mathematics. Entry requires the permission of both departments. For details see Mathematical Physics honors program.

Joint Honors in Mathematics and Computing Science
This honors program is offered jointly with the School of Computing Science. Entry into this program requires the permission of both departments. For details see Mathematics and Computing Science Program.

Advisory Service

Mathematics major and honors students should consult a departmental advisor for further information before planning their programs in detail. Although no upper division courses are specified for the satisfaction of upper division course requirements, certain course combinations of courses will form more cohesive programs than others. It is highly recommended that students read the Student Guide issued by the Department of Mathematics and Statistics and discuss these topics with an advisor.

Statistics Undergraduate Courses

Faculty of Science
See also courses listed under Actuarial Mathematics (ACMA), Mathematics and Computing Science (MACM) and Mathematics (MATH).

Open Workshop for STAT Courses
(see courses marked with ** below)

Some introductory and service courses are organized through the department's open workshops. In addition to regularly scheduled lectures, students registered in these courses are encouraged to come to the workshops for assistance with problems and questions any time during posted working hours. At the workshop students will have the opportunity to meet with the co-ordinator, the teaching assistants and other students, and work together to understand statistics in a friendly and helpful environment. Supplementary course materials, Macintosh computers and calculators are available for student use.

Statistics Workshop; K9516 101,103, 270, 301, 302; Ms X.Q. Chen

Beginning Level Requirements in Statistics
Students considering registering in a statistics course who do not have BC High School Math 11 (or equivalent) must see the co-ordinator of the Basic Math Workshop (as described under Mathematics in the Course Description Index). These students may take the non-credit basic math course, Basic Algebra, offered through Continuing Studies.
Students who are unsure of their level of preparation are strongly encouraged to take the free math assessment test at the Basic Math Workshop, TLX 9507, the Academic Resource Office P9310 (if the workshop is closed) or Simon Fraser University at Harbour Centre.

Minimum Grade Requirement in Prerequisites for Later STAT Courses
Students enrolled in courses offered by the Mathematics and Statistics Department must have obtained grades of C- or better in prerequisite courses.

Some experience with a high level programming language is recommended by the beginning of the second year.

No student may take, for further credit, any course offered by the Department of Mathematics and Statistics which is a prerequisite for a course the student has already completed with a grade of C- or higher, without permission of the department.

Courses marked with an asterisk (*) are intended to be particularly accessible to students who are not specializing in Statistics.

*STAT 101-3 Introduction to Statistics, Option A
An introductory course in random variables and their distributions, estimating and hypothesis testing. (3-0-1**) Prerequisite: see above table. 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, 103, 301, MATH 101 or 102 may not take STAT 101 for further credit.

*STAT 103-3 Introduction to Statistics for Social Sciences
A course similar to STAT 101 but directed to students in the social sciences. (3-0-1**) Prerequisite: BC High School Math 11 (or equivalent) or Basic Algebra 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 103. Students with credit for STAT 101, 102, 301, MATH 101 or 102 may not take STAT 103 for further credit.

STAT 270-3 Introduction to Probability and Statistics
Basic laws of probability, sample distributions. Introduction to statistical applications. (3-0-1**) Prerequisite: MATH 152 or 155 or 158 must precede or be taken concurrently. Students with credit for MATH 371 or 272 may not take STAT 270 for further credit.

STAT 280-3 Applied Probability Models
Review of elementary probability models. Conditional probability and conditional expectation. Fitting and testing adequacy of models. Applications to production management and quality control. Introduction to simple Markov chains, Poisson processes, inventories and queues. Reliability models including lifetime analysis and circuit configuration. (3-1-0) Prerequisite: STAT 270 (or MATH 272).

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 301-3 Statistics for the Life Sciences
An introductory course in research methodology and associated statistical analysis techniques for students with training in the life sciences. (3-1-0**) Prerequisites: either the student must have 45 semester hours of credit or a minimum of 30 semester hours including MATH 152 or 155. Students with credit for STAT 101, 102, 103 or 270 (formerly MATH 272) may not take STAT 301 for further credit. Mathematics minor, major and honors students may not use this course to satisfy the required number of semester hours of upper division mathematics. However, they may include the course to satisfy the total number of required hours of upper division credit.

*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. (3-0-1**) Prerequisite: STAT 101 (or MATH 101) or STAT 102 (or MATH 102) or STAT 103 or STAT 270 (or MATH 272) or STAT 301 or ARCH 376 or BUEC 232 (formerly 332). Students with credit for MATH 302 may not...
take STAT 302 for further credit. Mathematics major and honors students may not use this course to satisfy the required number of semester hours of upper division Mathematics. However, they may include the course to satisfy the total number of required hours of upper division credit.

STAT 330-3 Linear Models in Applied Statistics I
Standard statistical inference procedures for analysing experimental and survey results. Statistical model building. Foundations of experimental design. (3-1-0) Prerequisites: MATH 232 and STAT 270 (MATH 272). Students with credit for MATH 372 may not take STAT 330 for further credit.

STAT 350-3 Linear Models in Applied Statistics II

STAT 380-3 Introduction to Stochastic Processes

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. (3-1-0) Prerequisites: dependent on the topic covered.

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. (3-1-0) Prerequisites: STAT 302 or STAT 350.

STAT 403-3 Intermediate Sampling and Experimental Design
A practical introduction to useful sampling techniques and intermediate level experimental designs. (3-0-2) Prerequisites: STAT 302. Students with credit for STAT 410 or 430 may not take STAT 403 for further credit. Mathematics minor, major and honors students may not use this course to satisfy the required number of semester hours of upper division mathematics credit. However, they may include the course to satisfy the total number of required hours of upper division credit.

STAT 410-3 Statistical Analysis of Sample Surveys
An introduction to the major sample survey designs and their mathematical justification. Associated statistical analyses. (3-1-0) Prerequisite: STAT 330 (or MATH 372) or permission of the instructor. Students with credit for MATH 304 may not take STAT 410 for further credit.

STAT 420-3 Non-Parametric Statistics
Non-parametric statistics concerns methods which do not involve special assumptions of parent distributions: tests based on the binomial distribution, contingency tables and chi-squared test; tests for two or more samples based on ranks and rank correlation statistics. (3-0-0) Prerequisite: STAT 330 (or MATH 372) or permission of the department. Students with credit for MATH 473 may not take STAT 420 for further credit.

STAT 430-3 Statistical Design and Analysis of Experiments
An extension of the designs discussed in STAT 330 to include more than one blocking variable, incomplete block designs, fractional factorial designs, and response surface methods. (3-1-0) Prerequisite: STAT 350 (or MATH 372) Students with credit for MATH 404 may not take STAT 430 for further credit.

STAT 440-3 Statistical Quality Control
Design and implementation of control charts and alternatives, process capability analysis, acceptance sampling procedures, system reliability models, hazard analysis, and related economic considerations. (3-1-0) Prerequisites: STAT 280 and 330 (or MATH 372)
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. (3-1-0) Prerequisite: STAT 350. Students with credit for MATH 472 may not take STAT 450 for further credit.

STAT 460-3 Decision Analysis and Bayesian Inference
Review of marginal and conditional distributions. Prior, posterior, and predictive distributions. Utilities, decision analysis under certainty, decision trees, backward induction. Bayesian estimation and hypothesis testing, comparison with classical methods. (3-1-0) Prerequisite: STAT 350. Students with credit for MATH 475 may not take STAT 460 for further credit.

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. (3-1-0) Prerequisites: dependent on the topic covered.

STAT 495-3 Directed Studies in Probability and Statistics
Independent reading or research on consultation with the supervising instructor. Prerequisites: written permission of the Department Undergraduate Studies Committee.

Department of Physics
Location: P8429 Shrum Science Centre
Telephone: 778.782.4465, 778.782.3592 Fax
Chair: R.F. Frindt BSc (Alt), PhD (Camb), PEng

Professors Emeriti
J.F. Cochran BASc, MA (Br Col), PhD (Ill)
S.R. Morrison BA, MA (Br Col), PhD (Penn)
K.E. Rieckhoff BSc, MSc, PhD (Br Col)

Professors
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 BS (Rensselaer), PhD (C'nell), Vice-President Research, Dean of Graduate Studies
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
J.R. Dahn BSc (Dal), MSc, PhD (Br Col)
R.H. Enns BSc, PhD (Alta)
R.F. Frindt BSc (Alta), PhD (Camb), PEng, Chair of Department
S. Gygax Dipl Phys, PhD (ZŸr)
O.F. Hausser MSc (Erlangen), PhD (Heidel)
D.J. Huntley BASc, MA (Br Col), D Phil (Oxf)
J.C. Irwin BASc, PhD (Br Col)
G. Kirecenow BSc (W'Aust), DPhil (Oxf)
M. Plischke BSc (Montr), Mphil (Yale), PhD (Yeshiva)
M.L.W. Thewalt BSc (McM), MSc, PhD (Br Col)
K.S. Viswanathan BSc (Madras), MA, PhD (Calif)
M. Wortis AB, AM, PhD (Harv)

Associate Professors
J.L. Bechhoefer AB (Harv), PhD (Chic)
B. Heinrich MSc, PhD (Czech Acad Sc)
L.H. Palmer AA (Sacramento), AB, PhD (Calif)
Assistant Professor
C. Bolognesi BEng (McG), MEng (Carl), PhD (Calif)*
B. Friskin BSc (Qu), MSc (Northwestern), PhD (Br Col)
D. Loss BSc, PhD (Zur)
H.D. Trottier BSc, PhD (McG)
S. Watkins BSc (Qu), MSc, PhD (S Fraser)

Adjunct Professors
B.K. Jennings BSc (Mt Allison), MSc, PhD (McM)
M. Vetterlie BSc (McG), PhD (McM)
R.M. Woloshyn BSc (Man), PhD (SUNY)

Associate Members
J.M. D'Auria, Chemistry
D. Erle Nelson, Archaeology
E.M. Voigt,** Chemistry
E.J. Wells, Chemistry

Laboratory Instructors
N. Alberding BSc (W Ont), PhD (Ill)
J.M. Einstein BSc, MSc (Cant), MEd (S Fraser)

*joint appointment with Engineering Science
**professor emeritus

Advisor
Dr. L.H. Palmer, P8433 Shrum Science Centre, 778.782.4844

Computer Skills
Computing skills such as those obtained in CMPT 102 will be expected of students entering the second year Physics courses. The Co-operative Education program highly recommends that Co-op students complete one of CMPT 101, 102 or 103, plus 112 prior to placement in the first work term.

Undergraduate courses
Course descriptions for all Physics undergraduate courses.

Physics Major Program
This program offers a solid physics background with the opportunity to branch out into other disciplines. Because of maximum flexibility in upper division Physics requirements, students can plan their own upper division major programs to fit individual objectives and interests. It is strongly recommended that students consult a Physics advisor when planning their programs.

Lower Division Requirements
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III
MATH 252-3 Vector Calculus
PHYS 120-3 Modern Physics and Mechanics
PHYS 121-3 Optics, Electricity and Magnetism
PHYS 131-2 General Physics Laboratory B
PHYS 211-3 Intermediate Mechanics
PHYS 221-3 Intermediate Electricity and Magnetism
PHYS 233-2 Introductory Physics Laboratory A
PHYS 234-3 Introductory Physics Laboratory B
PHYS 244-3 Thermal Physics

Upper Division Requirements
MATH 310-3 Introduction to Ordinary Differential Equations
PHYS 326-3 Electronics and Instrumentation
PHYS 331-3 Electronics Laboratory
PHYS 332-3 Intermediate Laboratory
PHYS 355-3 Optics
PHYS 385-3 Quantum Physics

In addition, a minimum of 15 other upper division credits in Physics must be taken to fulfill the Physics subject area requirements for a majors degree.

Non-science Electives - Students must complete a minimum of 12 semester hours outside the Faculty of Science (excluding EDUC 401 to 407), including six hours from the Faculty of Arts.

In addition to the above, students must take sufficient unspecified upper level courses to complete a minimum of 44 semester hours, and further unspecified courses at any level to a total credit of 120 semester hours (see Faculty of Science requirements).

Applied Physics Major Program
This program, leading to a BSc degree in Applied Physics, offers a solid background in physics combined with the applied aspects of physics necessary for students planning careers in high technology industries. Students should enrol in the Co-op program to acquire valuable industrial experience.

Lower Division Requirements
CHEM 102-3 General Chemistry I
CHEM 103-3 General Chemistry II
CHEM 115-2 General Chemistry Laboratory I
CMPT 102-3 Introduction to FORTRAN for Science Students
CMPT 105-3 Fundamental Concepts of Computing
CMPT 290-3 Introduction to Digital Systems
MATH 151-3 Calculus I
MATH 152-3 Calculus II
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III
MATH 252-3 Vector Calculus
PHYS 120-3 Modern Physics and Mechanics
PHYS 121-3 Optics, Electricity and Magnetism
PHYS 131-2 General Physics Laboratory B
PHYS 211-3 Intermediate Mechanics
PHYS 221-3 Intermediate Electricity and Magnetism
PHYS 233-2 Introductory Physics Laboratory A
PHYS 234-3 Introductory Physics Laboratory B
PHYS 244-3 Thermal Physics (54 semester hours)

Upper Division Requirements
Core
MATH 310-3 Introduction to Ordinary Differential Equations
MACM 316-3 Numerical Analysis I
PHYS 324-3 Electromagnetics
PHYS 326-3 Electronics and Instrumentation
PHYS 331-3 Electronics Laboratory
PHYS 332-3 Intermediate Laboratory
PHYS 355-3 Optics
PHYS 385-3 Quantum Physics

either all of
NUSC 341-3 Introduction to Radiochemistry
NUSC 342-3 Introduction to Nuclear Science
NUSC 346-2 Radiochemistry Laboratory

or three of
PHYS 365-3 Semiconductor Device Physics
PHYS 431-4 Advanced Physics Laboratory I
PHYS 455-3 Laser Physics
PHYS 465-3 Solid State Physics

either
CMPT 390-3 Digital Circuits and Systems
CMPT 391-4 Microcomputer Hardware Workshop

or
PHYS 430-5 Digital Electronics and Interfacing

(37-41 semester hours)

Non-Science electives - Students must complete a minimum of six semester hours of electives from the Faculty of Arts.

In addition to the above, students must take sufficient unspecified courses in any division to complete a minimum of 120 semester hours total credit.

Physics Honors Program
A student intending to pursue postgraduate studies in Physics or closely related disciplines is advised to take the Physics honors program. Graduateis permitted only if an average grade of B or higher is maintained.

Lower Division Requirements
Requirements are the same as for Physics major program.

Upper Division Requirements
MATH 310-3 Introduction to Ordinary Differential Equations.
MATH 322-3 Complex Variables

plus one more MATH course numbered 316 or greater (including MACM 316)

all of
PHYS 325-3 Relativity and Electromagnetism
PHYS 326-3 Electronics and Instrumentation
PHYS 331-3 Electronics Laboratory
PHYS 332-3 Intermediate Laboratory
PHYS 345-3 Statistical Physics
PHYS 355-3 Optics
PHYS 384-3 Methods of Theoretical Physics I
PHYS 385-3 Quantum Physics
PHYS 413-3 Advanced Mechanics
PHYS 415-3 Quantum Mechanics
PHYS 425-3 Electromagnetic Theory
PHYS 431-4 Advanced Physics Laboratory I
four of
PHYS 430-5 Digital Electronics and Interfacing
PHYS 432-5 Physics Research Thesis
PHYS 455-3 Laser Physics
PHYS 465-3 Solid State Physics
PHYS 484-3 Nonlinear Physics
NUSC 485-3 Particle Physics

Non-science Electives
A minimum of 12 hours of electives is required from outside the Faculty of Science (excluding EDUC 401 to 407) including six from the Faculty of Arts.

In addition to the courses listed above, the student must elect sufficient unspecified courses* in any division to complete a minimum of 132 semester hours total credit. (See Faculty of Science, requirements.)

*excluding EDUC 401, 402, 405, 406.

**Recommended Program for First Four Semesters**

**Semester I**
PHYS 120-3 Modern Physics and Mechanics
MATH 151-3 Calculus I
CHEM 102-3 General Chemistry I
elective I (CHEM 115 suggested)
elective II (14 or 15 credit hours)

**Semester II**
PHYS 121-3 Optics, Electricity and Magnetism
PHYS 131-2 General Physics Laboratory B
CHEM 103-3 General Chemistry II
MATH 152-3 Calculus II
elective III (CMPT 102-3 suggested)
elective IV (17 credit hours)

**Semester III**
PHYS 211-3 Intermediate Mechanics
PHYS 233-2 Introductory Physics Laboratory A
MATH 232-3 Elementary Linear Algebra
MATH 251-3 Calculus III
elective V
elective VI (17 credit hours)

**Semester IV**
PHYS 221-3 Intermediate Electricity and Magnetism
PHYS 234-3 Introductory Physics Laboratory B
PHYS 244-3 Thermal Physics
MATH 252-3 Vector Calculus
MATH 310-3 Introduction to Ordinary Differential Equations
elective VII (17 credit hours)

**Minor Program**
To qualify for a minor in Physics, a student must complete a minimum of 14 semester hours from among the upper division Physics courses numbered 300 and above (excluding special topics courses in Physics), together with all the prerequisites for those courses.

**Nuclear Science Courses**
NUSC 442 and 485 may be counted as upper division Physics courses in Physics major, honors and minor programs.
Engineering Transfer Program
The Department of Physics participates in an Engineering Transfer Program. The satisfactory completion of this program will gain students standing in the Faculty of Applied Science (Engineering) at the University of British Columbia.

Other Programs and General Notes

Chemical Physics Programs
An honors and a major program in Chemical Physics are offered jointly with the Department of Chemistry. Entry requires permission of both departments.

Mathematical Physics Program
An honors program in Mathematical Physics is offered jointly with the Department of Mathematics. Entry requires permission of both departments.

Nuclear Science Minor Program
This minor program is offered jointly with the Department of Chemistry.

Co-operative Education Program
Dr. A.E. Curzon, Physics Co-op Co-ordinator, 778.782.4181/4465
Ms. C. Horvath, Faculty of Science Co-op Co-ordinator, 778.782.3270

Co-operative Education combines academic studies and work experience related to those studies. The student spends a total of four semesters off campus in study-related jobs.

Arrangements for the work experiences are made through the Co-op Co-ordinators and the University's Office of Co-op Education.

Quaternary Studies Program
Location: 7137 Classroom Complex
Telephone: 778.782.3321/3723

Associated Faculty
D.V. Burley, Archaeology
J.C. Driver, Archaeology
K.R. Fladmark, Archaeology
B.D. Hayden, Archaeology
J.D. Nance, Archaeology
D.E. Nelson, Archaeology
R. Shutler, Jr., Archaeology
M.F. Skinner, Archaeology
R.W. Mathewes, Biological Sciences
J. C. Day, Resource and Environmental Management
C.B. Crampton, Geography
J.M. D'Auria, Chemistry
E.J. Hickin, Geography
I. Hutchinson, Geography
A.C.B. Roberts, Geography
M.C. Roberts, Geography
R.G. Korteling, Chemistry
D.J. Huntley, Physics

Adjunct Professors
P.T. Bobrowsky, BC Ministry of Energy, Mines and Petroleum Resources
J.C. Clague, Geological Survey of Canada
L.E. Jackson, Geological Survey of Canada
L. Luternauer, Geological Survey of Canada
The study of the Quaternary (the last 2 million years of the earth's history) involves a broad group of disciplines including biology, climatology, archaeology and surficial geology.

This is a minor program which provides a background in Quaternary Studies through course work in various disciplines offered through regular departments in the Faculties of Arts and Science. Students considering entry should obtain standing in the prerequisites for the courses required in this minor.

**Undergraduate courses**
Course descriptions for all Quaternary Studies undergraduate courses.

**Upper Division Requirements**
(14-16 semester hours)

All students must take the following.

*one of*
ARCH 410-5 Advanced Archaeometry
ARCH 411-5 Archaeological Dating

*one of*
ARCH 340-5 Introductory Zooarchaeology
ARCH 365-3 Ecological Archaeology
BISC 434-3 Paleoecology and Palynology

*one of*
ARCH 438-5 Geoarchaeology
GEOG 412-4 Quaternary Geology and Geomorphology
GEOG 416-4 Pleistocene Geography

*both of*
QUAT 400-1 Seminar in Quaternary Studies
QUAT 401-1 Field School

The field school (QUAT 401) will normally be held in the week following the final examination period in the Spring semester.

Students who wish to count one of the upper division requirements for credit towards their majors may substitute QUAT 403 as one of the requirements for the minor.

**Quaternary Studies**

*Faculty of Science*

QUAT 400-1 Seminar in Quaternary Studies
An examination of current issues and problems in Quaternary research. Prerequisites: only available to students enrolled in Quaternary Studies program, and permission of Program Advisor. Graded on S/U basis.

QUAT 401-1 Field School
Identification, mapping and interpretation of Quaternary deposits and landforms, with particular emphasis on British Columbia. Prerequisites: only available to students enrolled in Quaternary Studies program, and permission of program advisor. Graded on S/U basis.
QUAT 403-4 Directed Readings in Quaternary Studies

Designed for students in the Quaternary Studies minor program who wish to pursue in detail a topic not covered in existing courses. Prerequisite: permission to enter directed readings courses requires written consent of both a faculty member associated with the Institute for Quaternary Research (IQR) who is willing to supervise the research, and the Director of IQR.

School of Communication
Location: 6135 Classroom Complex
Telephone: 778.782.3595
Director: B. Lewis, BA, (Hamilton Coll), MA, PhD (Iowa)
Graduate Program Chair: R. Gruneau, BA (Guelph), MA (Calg), PhD (Mass); 778.782.3595

Faculty and Areas of Research
For a complete list of faculty, see Communication undergraduate section.

P.S. Anderson - Telecommunication and broadcasting policy; communication technology; communication to mitigate disasters/emergency communications
R.S. Anderson - International development; communication in conflict and intervention; community economic development
A.C.M. Beale - Communication theory and technology issues; film and video; cultural policy; feminist analyses
G.W. Faurkar - Media analysis; aesthetics and popular culture; social and political theory; economic discourse and market populism
R.S. Gruneau - Popular culture and media, communications and cultural theory
P. Guild - Management of technological change; new product and service formulation; mediated communication
D. Gutstein - Journalism studies, information policy, access to information, documentary research techniques
R.A. Hackett - Political communication; journalism and media studies, news discourse on war, peace and social movements
L.M. Harasim - Computer mediated communication and collaboration; telelearning and telework; social network design and evaluation
P. Heyer - Media history and theory; non-verbal communication
M.P. Hindley - Interpersonal communication; communication and psychological issues; family communication; conflict resolution
P.M. Howard - Communication in the computerized workplace; technology transfer; knowledge systems in development
R.W. Howard - Communication in development, conflict and communication: international environmental issues, political communication in non-capitalist societies
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. Lewis - Pacific Rim; film; policy
R.M. Lorimer - Publishing; mass communication
T.J. Mallinson - Interpersonal and group processes; organizations
C.A. Murray - Strategic marketing, policy and regulation in telecommunications and broadcasting; political communication and opinion research; social marketing
W.D. Richards - Communication network theory and methods; dynamic system simulation methods; social and organizational network research
R.K. Smith - Management of technological innovation; formulation of new products and services; team work
B.D. Truax - Acoustic and electroacoustic communication; audio aspects of media and advertising; electroacoustic and computer music
J.W. Walls - Intercultural communication; computerized communication in Asian languages; language and culture in translation
A. Wilden - Communication and culture; sex/gender differences and stereotyping; socialization; media analysis; systems ecology; critical theory; videomontage; strategy of communication

The study of communication has recently emerged as an identified academic discipline. At the same time, a number of the traditional disciplines in the social sciences, the humanities, and the natural sciences employ communicational approaches in various areas. Communicational perspectives are also becoming prominent in the professions, notably in law, medicine, counselling, business, labor, education, trade, diplomacy, advertising, broadcasting, etc. As a social science, communication is distinctively trans-disciplinary.
The school has drawn on a number of perspectives, but is most readily distinguished by the fact that it treats communication as a humanistic social science, and is concerned with the contexts within which information, in all its diverse forms, is created, coded, communicated, and controlled. This approach provides students with wide opportunities to explore both communication theory and communication practice, as well as the relationship between the two. It encourages the concrete application of theory and research to modern society - its historical origins, its dominant values, its institutions and policies, its present structure, its current problems and its potential for change.

The School of Communication offers graduate programs leading to an MA or PhD.

**Fields of Study and Research**

Present 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 analysis, popular culture, cultural policy
- Acoustic environments and communication
- Management of technology
- Telework, tele-learning, distance education
- Political communication
- Communication in conflict and intervention
- Crisis/emergency communication

**Research and Training Facilities**

- Sonic Research Studio and Soundscape Archives
- Documentation Centre
- Virtual Media Lab (network and multi-media studies)
- Media Analysis Laboratory
- Telematics Laboratory

**MA Program**

**Admission**

Admission requirements will ordinarily include holding a Bachelors 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 Communications Graduate Studies Committee find that a suitable thesis supervisor is available. Besides applications from students in Communication, the school also encourages applications from students with experience in the humanities, in the social or biological sciences, and in interdisciplinary studies.

All applications should be directed to the Graduate Studies Committee and, in addition to general university requirements, should include the following.

- a 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. In addition, any tapes, films, etc. the applicant considers relevant.

In the Graduate General Regulations section, see 1.3.4 Admission under Special Arrangements, 1.3.5. Admission as a Qualifying Student and 1.3.6 Admission as a Special Student. Students will normally enter the program in the Fall semester. The annual deadline for applications is February 1. The committee will announce its decisions to applicants in April.
Advising and Supervision
Students are advised to read the Graduate General Regulations and the school's terms of reference for supervisory committees.

Degree Requirements
Candidates for the Masters degree must normally satisfy the following.

- course work consisting of at least six courses at the graduate level (normally completed before beginning a thesis, a project, or extended essays) which must include the following.
  - one of CMNS 800, 801 or 802
  - CMNS 860 (graduate colloquium)
  - four additional courses, at least two of which are to be selected from within the school and may include courses shown in the first point above. A maximum of two courses may be directed studies. No more than one course of directed studies or special topics may be completed with the same instructor except by permission of the Director of the School.

- an original thesis or
  - an original project which, because of content or method, does not conform to the usual definition of a thesis; or
  - extended essays: at least two extended essays in the form of research papers to be submitted and defended orally. These papers will be bound and deposited in the University Library. Procedures used in the supervision and examination of extended essays are the same as those used for theses.

- supervision
  - a supervisory committee should be approved by the Graduate Studies Committee at the beginning of the third semester.
  - formal review: graduate degree candidates will have an annual formal review of their academic progress by the Graduate Studies Committee.

PhD Program
The school will offer PhD students the opportunity to choose from the fields of study and research listed above in context with faculty interests, among which are two foci:

Critical Analysis of Media
The nature, role, import, and function of mass media constitute essential concerns of the critical analysis area of communication studies. From a social scientific perspective, critical analysis explores relationships between mass media and the larger sociocultural, behavioral, political, and economic systems. From a technical perspective, the media are analyzed in terms of actual practice; that is, how technology operates and is utilized to particular ends. Both areas provide a comprehensive and detailed description of the processes, and a conceptual framework for analysis of contemporary mass media.

Social Implications of Communications
The major areas of study in this field are communications policy, regulatory issues, and the social consequences of information technologies ("the information society").

The study of communication policy encompasses broadcasting, film and telecommunication. The emphasis is on the institutional, social, economic, and political factors that shape the specific policies applied in each area. Regulation of media, and the application of new technologies to cultural development, or for service to rural or remote areas, is a focus of concern.

The study of information technology from a social scientific perspective is concerned with: the social context in which communication and information technology are being developed; what the technology is, what it does, what resources it requires, how it meshes and conflicts with existing social structures, and how it changes and is changed by those same structures. The relation between a society, the social goals of its members, and its media of communication is the primary theoretical focus of this area.

Admission
Admission requirements for this program will normally include a Masters degree or an exceptional record of undergraduate and/or graduate work in a relevant area of study. Enrollment is strictly limited by the school.
For general university admission requirements, refer to General Regulations. In addition to satisfying general requirements, applicants are asked to provide

- a succinct account of their past academic experience, scholarly work, and research accomplished or in progress
- an account of the applicant's relevant previous experience including teaching and degree of responsibility for course content
- samples of scholarly writing, research reports, or other material - the names of three persons qualified to assess the student's potential; (at least two should be from academic sources)
- a brief outline of the applicant's research objectives, with representative bibliographical references and other source material, where applicable

Students will normally be expected to enter the program in the Fall semester. The annual deadline for applications is February 1. The committee will announce its decisions to applicants in April.

**Degree Requirements**

All candidates for the Doctoral degree are required to complete course work, take a Comprehensive Examination, and submit a dissertation which demonstrates the student's ability to make an original contribution to the field of Communication. Candidates must normally satisfy the following requirements.

**Language Requirement**

To graduate with a PhD, students will normally be required to demonstrate a reading ability in one language other than English that is acceptable to the student's supervisory committee. Ability is determined by a time-limited examination of the translation into English of a passage from an appropriate Communication document or text. A dictionary is permitted. A waiver of this requirement requires permission of the Graduate Studies Committee.

**Course Work**

- nine graduate courses (not including CMNS 860) are required for those entering with a Bachelor's degree, or six graduate courses (not including CMNS 860) for students who have completed a Masters degree. A student's Supervisory Committee may require additional courses relevant to the dissertation. These are normally completed before taking the Comprehensive Examination, or beginning a dissertation, and will include the following.

  - two of group I courses
  - Research Methods (CMNS 805)
  - PhD Colloquium (CMNS 885)
  - For those entering with a Bachelor's degree, five additional courses. At least three of these courses must be taken from courses offered by the school. For those entering with a Masters degree, they must take two additional courses. A maximum of two courses may be group V courses; and no more than one course of directed studies or selected topics may be taken with the same instructor except by permission of the Director of the School.
  - Students will be required by the Communications Graduate Studies Committee to demonstrate adequate command of any language essential to the completion of their dissertation.

**Group I Courses**

CMNS 800, 801, 802

**Group II Courses**

CMNS 805, Research Methods

**Group III Courses**

CMNS 810, 815, 830, 840, 845, 856, 859, 882

**Group IV Courses**

CMNS 860, 885

**Group V Courses**

CMNS 850, 851, 855, 880, 881
Group VI Courses
CMNS 898, 899

The Comprehensive Examination
With the consent of their Supervisory Committee, students may apply to take the Comprehensive Examination following completion of required course work. Upon passing, the student will be admitted to full degree candidacy. The examination may be re-taken once.

To prepare for the Comprehensive Examination, the student shall select at least three fields of interest related to Communication. At least one field shall focus on either the theory, methodology, or history of Communication.

The student shall submit a short definition paper, including bibliography, on each of the fields selected in preparation for both a written and oral examination. Specific guidelines for these examinations are available from the departmental graduate secretary.

An Original Dissertation
PhD students are required to 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 Communication terms of reference for supervisory committees.

At the time of admission, in consultation with the graduate student, the Graduate Program Committee will appoint a senior supervisor. Upon his/her recommendation, a supervisory committee will be formed and approved no later than the end of the second semester in residence. This committee will normally consist of at least three faculty members, two of whom must be from the school, and one from another area or department related to the student's field of specialization (e.g., Sociology, Psychology, Linguistics). The committee's responsibilities are detailed in 6.4 of the Graduate General Regulations.

Students have the right to discuss their programs and their status with the Communications Graduate Studies Committee at any stage. They also have the right to ask for a review of any recommendation or grade, and the right to appeal any decision of any committee, supervisor or faculty member.

Management of Technological Change (NSERC/SSHRC/Bell Northern Research/BC Tel Chair in Management of Technology)
Telephone: 778.782.5116
Director: P. Guild BA (Wat), MA (Car), PhD (Oxf)

The pressure to produce and adopt technological innovation often outstrips industry's ability to manage the change necessary to direct its innovative capacities toward attractive market opportunities in the shortest possible time. The research and teaching program is designed to assist Canadian firms to manage technological innovation more quickly while increasing the quality of investment decisions. Pursuing this goal, the program will look to design teams and their management. Design teams are multidisciplinary work-groups who collectively may have such skills as: engineering, computing science, industrial design, human factors, market research and project management.

The Management of Technology research program is part of the Centre for Policy Research on Science and Technology (CPROST).

Graduate Courses
Communication graduate students may also take PUB 800, 801, or 802 for Communication credit.

CMNS 670-4 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.
CMNS 671-4 Editorial Theory and Practice
The theoretical component of this course focuses on theories of composition and rhetoric. The practical component will focus on the various types of editing that take place in publishing. Students are examined on both the theory and their attained competence in editing.

CMNS 672-4 Design and Production Control in Publishing
Part 1 will consider the principles of and current trends in graphic design and illustration as applied in the publishing industry. Students will undertake design exercises in addition to learning basic principles. Part 2 will examine, by means of a practical project, of the elements of production for printed work.

CMNS 677-4 Directed Studies

CMNS 678-4 Contemporary Issues Seminar
This course is offered occasionally depending on the availability of faculty with specific expertise.

CMNS 679-8 Publishing Internship
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.

CMNS 800-5 Contemporary Approaches in Communication Studies
Current perspectives in communication studies and theory.

CMNS 801-5 Design and Methodology in Communication Research
Problems and methods of communication research. Theoretical assumptions of communication methodology. Examination of research studies and field studies as case study examples. Students may design a research project in a selected area.

CMNS 802-5 History of Communication Theory
An historical analysis of classic works in 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 810-5 Advanced Communication Theory
Seminar on contemporary theories of communication and review of applications.

CMNS 815-5 The Social Matrix of Communication
A study of factors governing the flow of information in society, including social values, communication media, institutional and organizational settings, roles, power, status.

CMNS 830-5 Communications Media: Research and Development
An analysis of specific problems centered on the sociological and politico-economic complexities associated with the rapid expansion of communications technologies and systems. Particular attention will be paid to the relation of communications policy to social and economic development in Canada and in the Third World countries.

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 International Development
A study of the flow of influence and exchange of information between and within networks of institutions engaged in international development, the contribution of communication to development, and the attempts to change the pattern of international communication. Prerequisite: one of CMNS 800, 801, 802.
CMNS 850-5 Directed Readings and Research
Pursuance of particular areas of interest related to a student's program.

CMNS 851-5 Directed Study
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
Concentrated studies in areas of specialization.

CMNS 856-5 Graduate Seminar
Advanced work in an area of specialization. Review and evaluation of research in progress.

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
Critical discussion of selected problems in communication. MA students must complete this course once before graduation; S/U standing only.

CMNS 870-5 Text and Context
An examination of two fundamental elements that contribute to our understanding of the role of publishing in society. Part 1 examines the medium of print and its influence on human expression and thoughr. Part 2 discusses the publishing programs of selected contemporary publishers in both a cultural and business context.

CMNS 871-4 The History of Publishing
A consideration of publishing from the time of Gutenberg to the present day. Emphasis will be placed on the role of publishing and publishing policies in Canadian and other societies.

CMNS 872-4 Technology and the Evolving Form of Publishing
An examination of 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.

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 885-2 PhD Colloquium
Critical discussion of selected problems in communication.

CMNS 898 MA Thesis
CMNS 899 PhD Thesis
School of Computing Science
Location: 9971 Applied Sciences Building
Telephone: 778.782.4277
Director: W.S. Luk BA (Lond), MSc (Wat), PhD (Alta)
Graduate Program Director: L. Hafer, 9971 Applied Sciences Building, 778.782.4842

Faculty and Areas of Research
For a complete list of faculty, see Computing Science undergraduate section.

H. Ait-Kaci - Theory and implementation of programming languages, logic, and symbolic computation, and symbolic computation, artificial intelligence, databases
M.S. Atkins - Operating systems, distributed and parallel systems, medical imaging
B.K. Bhattacharya - Pattern recognition, computational geometry
F.W. Burton - Functional programming, parallel computing
T.W. Calvert - Graphics, human figure animation, human-machine interaction
R.D. Cameron - Programming languages and systems, software engineering
N.J. Cercone - Artificial intelligence, computational linguistics, knowledge-based systems
V. Dahl - Logic programming, computational linguistics, artificial intelligence, deductive databases and expert systems
J.P. Delgrande - Artificial intelligence, knowledge representation
J.C. Dill - Computer graphics, computer aided engineering, design and manufacturing
F.D. Fracchia - Computer graphics and scientific visualization, mathematical modelling in biology
R. Funt - Artificial intelligence, computer vision, colour perception
A. Gupta - Constructive combinatorics, parallel complexity theory, optimization
R.F. Hadley - Artificial intelligence, automated learning, philosophical foundations of cognitive science, computational semantics,
L. Hafer - Constrained optimization, design automation
J.W. Han - Database and knowledge-base systems, deductive databases, logic programming
R.J.C. Harrop - Medical applications, automata theory, logic
W.S. Havens - Expert systems, constraint reasoning, artificial intelligence
P. Hell - Computational complexity, graph theory, optimization
R.F. Hobson - Very large scale integrated design, computer design, interpreter design
T. Kameda - Analysis of algorithms, computer communications networks, database systems
R. Krishnamurti - Approximation algorithms, operations research, parallel computing, optimization
Z.N. Li - Computer vision, image processing, artificial intelligence
A.L. Liestman - Analysis of algorithms, distributed algorithms, graph theory
W.S. Luk - Database systems, distributed processing
R.J. Sutcliffe - Computing languages, ethical and sociological issues, language standards and data structures
F. Swinkels - Artificial intelligence and its application to engineering and process control
P. Triantafillou - Distributed systems
M. Trummer - Numerical analysis
J.J. Weinkam - Programming languages, databases, computational epidemiology

Associate Members
J. Borwein Mathematics and Statistics
P.B. Borwein Mathematics and Statistics
J.C. Dill Engineering Science
R.D. Russell Mathematics
M. Trummer Mathematics
Research Facilities
The School of Computing Science operates several interconnected Local Area Networks in co-operation with other departments in the Faculty of Applied Sciences. These networks are connected to SFU-LAN, the campus-wide network, which also provides access to regional (BCnet), national (CA*net), and international networks (Internet).

Facilities include over 200 networked workstations, file servers, CPU servers, and other specialized systems. These are mostly SUN SPARC and NeXT workstations, with some Silicon Graphics Iris workstations and various PCs. Specialised facilities include an AIS 4000 parallel vision processor and a 76 node transputer system. Additionally, the School has comprehensive resources to facilitate VLSI design, simulation, fabrication and testing.

Other computing resources are provided by the University Academic Computing Services Department including six large SGI 4D multi-processor systems, four Sun SPARC-II computers, an IBM RS 6000, and an Auspex file server. These systems and a wide range of software and services are available to the Simon Fraser University campus community.

Laboratory for Computer and Communication Research
The purpose of the Laboratory is to

• promote inquiry into the problems of computer and communication research;
• develop a facility for basic computer and communication research and related research topics
• foster co-operative research efforts by members of the University, industry professionals, and government agencies
• assist members in the planning, funding, and conducting of research proposals and projects
• develop a research program for the direction of Masters and Doctoral theses and seek financial support for graduate students from industry and government
• sponsor distinguished visitors from other universities, research institutes, industry and government

Degrees Offered
The School of Computing Science offers programs leading to the MSc and PhD degrees in Computing Science. It provides students with graduate studies in the following areas: theoretical computing science; artificial intelligence; computer systems; computer design and organization; database systems; programming languages and systems; and advanced applications.

Admission
To qualify for admission to the MSc program, a student must satisfy the University admission requirements stated in section 1.3 of the Graduate General Regulations and must have a Bachelors degree or the equivalent in Computing Science or a related field.

To qualify for admission to the PhD program, a student must satisfy the University admission requirements stated in section 1.3 of the Graduate General Regulations and

• have a Masters degree or the equivalent in Computing Science or a related field or
• have a Bachelors 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 Masters 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 semesters 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, a set of subareas are identified and grouped into three major areas: Formal Topics in Computing Science, Computer Systems, and Knowledge and Information Systems. Table 1 shows the standard subareas within each area.
Table 1

Area I - Formal Topics in Computing Science
Algorithms and Complexity
Formal Logic and Language Semantics
Discrete Mathematics
Operations Research

Area II - Computer Systems
Operating Systems and Networks
Computer Design and Organization
Programming Languages and Compilers

Area III - Knowledge and Information Systems
Artificial Intelligence and Robotics
Database and Information Retrieval Systems
Numerical and Symbolic Computing
Computer Graphics and Interfaces
Software Methodology and Engineering

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 is specified in terms of number of courses and subareas selected from each of the three major areas. At its discretion, the Graduate Breadth Evaluation Committee may accept requests to define subareas other than those in Table 1 for the purpose of satisfying MSc or PhD breadth requirements.

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 other members (typically faculty) as appropriate. The choice of senior supervisor should normally 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 choice of the remainder of the committee members.

Section 1.6 of the Graduate General Regulations specifies that a senior supervisor will normally be appointed no later than the beginning of the student's third semester in the program, and that the remainder of the supervisory committee will normally be chosen in the same semester in which the senior supervisor is appointed.

Research Topics Seminars
The research topics seminar series is presented over the course of the year by faculty and graduate students. Faculty presentations are designed to acquaint new graduate students with the research interests of the faculty. Graduate student presentations typically showcase thesis research. Students in the first year of graduate study are required to attend faculty research topics seminars to become familiar with the research interests of the faculty.

MSc Program
Students in the MSc program are expected to acquire breadth of knowledge through a sequence of courses and depth of knowledge through completion and defense of a thesis based on independent work. Under normal circumstances a MSc degree should be completed within 6 semesters and should not require longer than 8 semesters.

Breadth Requirement
MSc students must take at least 15 semester hours of graduate level course credit (typically five courses) such that at least one course is chosen from each of areas I, II and III of Table 1. At least 12 of the 15 semester hours (typically 4 courses) must be taken in Computing Science. Coursework will normally be completed by the end of the student's fifth semester in the program.
Depth Requirement
MSc students are required to submit and defend a thesis based on their independent work. The student, in consultation with her/his supervisory committee, will formulate and submit for their approval a written thesis proposal, normally not later than the end of the third semester in the program.

Regulations specifying the composition of the examining committee and the procedures for the final public defense of the thesis can be found in sections 1.9 and 1.10 of the Graduate General Regulations. MSc students are required to give a seminar. Typically this will be on their thesis research and will be presented in the interval between distribution of the thesis to the committee and the defense.

PhD Program
Students in the PhD program are required to demonstrate breadth of knowledge as outlined below and demonstrate the capacity to conduct original research through the completion and defense of an original thesis. Under normal circumstances a PhD degree should be completed within 12 semesters and should not require longer than 15 semesters.

Breadth Requirement
PhD students are required to demonstrate breadth to a level equivalent to at least 21 semester hours of graduate level course credit (typically 7 courses), subject to the following distribution.

- three courses chosen such that one course is drawn from each of areas I, II and III of Table I.
- two additional courses chosen from any two of areas I, II and III and from sub-areas different than those used for the first three courses.
- two additional courses chosen by the student.

Up to two courses outside of Computing Science may be used in satisfying the breadth requirement, subject to approval by the student's supervisory committee and the Graduate Breadth Evaluation Committee. A PhD student is expected to achieve a minimum CGPA of 3.4 and passing marks in all courses.

Each student is required to submit a proposal describing her/his plan for satisfying the breadth requirement within 2 months of entering the program. In the proposal, a student may request that up to four courses and any portion of the breadth distribution be waived based on previous graduate coursework, or by examination. A minimum of 9 semester hours of coursework (typically 3 courses) is required. Proposals must be approved by the Graduate Breadth Evaluation Committee, which may approve the proposal or recommend alternatives at its discretion. The breadth requirement will normally be completed by the end of the student's third to sixth semester in the program, in proportion to the number of courses actually required.

Depth Requirement
PhD students are required to demonstrate depth of knowledge in their chosen research area through a public depth seminar and oral examination, to give a thesis proposal seminar, and to submit and defend a thesis based on their independent work which makes an original contribution to knowledge in computing science.

Depth Examination
The depth seminar and examination may be scheduled at any time following the student's completion of her/his breadth requirement. Typically this will be between the student's fifth and seventh semester in the PhD program; a specific recommendation will be made by the Graduate Breadth Evaluation Committee, in proportion to the amount of coursework required to satisfy the breadth requirement. The examining committee will consist of the student's supervisory committee and one or two additional examiners recommended by the supervisory committee and approved by the Graduate Program Committee. The scope of the exam will be centered on the student's research area(s); the examining committee, in consultation with the student, will specify the topics to be covered in the examination. The student will prepare a written survey and will give a public depth seminar, followed by the oral examination. Following the examination, the committee will meet and evaluate the student's performance in the program to that point. The committee's evaluation will be diagnostic, specifying additional work in areas of weakness if such exist. A second depth examination or withdrawal from the program may be recommended in extreme cases.
Thesis Proposal
The student, in consultation with her/his supervisory committee, will formulate and submit for their approval a written thesis proposal consisting of a research plan and preliminary results. The student will give a seminar and defend the originality and feasibility of the proposed thesis to the supervisory committee. The thesis proposal will normally be presented and defended within three semesters of the depth examination.

Thesis Defense
Regulations specifying the composition of the examining committee and the procedures for the final public defense of the thesis can be found in sections 1.9 and 1.10 of the Graduate General Regulations. PhD students are required to give a seminar; typically this will be on their thesis research and will be presented in the interval between distribution of the thesis to the committee and the defense.

Graduate Courses

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 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 720-3 Artificial Intelligence
Artificial Intelligence brings concepts such as computation, process, sub-procedure, data structure, and debugging to bear upon questions traditionally raised by Psychologists, Linguists, and Philosophers. In this course we will study a representative sample of work in the field. This will include programs which process written English, "see", play games, prove theorems, and solve problems. Exclusion: CMPT 410.

CMPT 730-3 Foundations of Programming Language
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 740-3 Database Systems
Review of introductory database concepts; query optimization; concurrency control; reliability and crash recovery; distributed databases; object-oriented databases; knowledge base management systems.

CMPT 750-3 Computer Architecture
Parallel processing: SIMD & MIMD systems, pipelining, data flow architecture; microprogramming; control memory minimization, optimization and verification of micro-programs.

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 811-3 Distributed Algorithms
This course is an introduction to computation in distributed systems with an emphasis on the design and analysis of distributed algorithms. We will study many of the distributed algorithms that have been proposed for such problems as election, selection, sorting, spanning trees, and routing. Several models of distributed computing will be discussed.

CMPT 812-3 Parallel Computation
This course is a theoretical treatment of parallel complexity theory concentrating on algorithms and models. Topics will include models of parallel computation, parallel complexity hierarchies, basic tools and techniques for the construction of parallel algorithms, and selected advanced topics.

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 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 approach, parallel vision machines and algorithms, and case study 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 in 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, nonmonotonic reasoning, inexact and imprecise reasoning, meta-reasoning, etc. Suggested preparation: a course in formal logic and a previous course in Artificial Intelligence.

CMPT 824-3 Issues in Logic Programming
This course covers the computation model of logic programs, the theory of logic programs, the Prolog language (both pure Prolog and real-life Prolog, with such features as meta-logical predicates, cuts and negation, extra-logical predicates, and pragmatic issues); advanced Prolog programming techniques, such as nondeterministic programming, incomplete data structures, logic grammars, and meta-interpreters; and applications, such as game-playing, equation solving, compilers.

CMPT 825-3 Natural Language Processing
In this course, theoretical and applied issues related to the development of natural language processing systems are examined. Investigations into parsing issues, different computational linguistic formalisms, natural language 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 semester will vary, depending upon the instructor,
but most of the following topics will be addressed in any given semester: connectionist models of intelligence; "human-like" automated deduction; reasoning by analogy; topics in natural language; automated concept learning; and computational approaches to semantics. Prerequisites: At least one graduate or undergraduate AI course, or instructor's permission.

CMPT 827-3 Expert Systems
This course will analyse the Artificial Intelligence theory and practice underlying Expert Systems and survey a number of the pioneering Expert System applications. Topics will include reasoning engines, the rule-based approach, search, model-based representations, constraint propagation, reasoning maintenance, uncertainty, knowledge acquisition, plus practical issues in Expert System development.

CMPT 830-3 Compiler Theory
Precedence, LL(k), LR(k) grammars; SLR(k), LALR(k), L(m)R(k) and LR(k) parsing techniques; transduction grammars; general compiler organization, code generation and optimization; memory allocation for object programs; garbage collection.

CMPT 831-3 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.

CMPT 841-3 Query Processing in Database Systems
Algorithms for data-intensive operations for disk-based, main-memory-based, loosely distributed and tightly coupled databases; analytical and empirical performance studies of database systems.

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 Principles of Database and Knowledge Base Systems
An advanced course on database systems which covers the following topics: semantic data modelling, engineering databases and spatial databases, object-oriented data models and systems, deductive database systems, semantic query optimization, learning and induction in database and knowledge base systems, and architectures of data-intensive knowledge base systems.

CMPT 851-3 Fault-Tolerant Computing and Testing
This course will cover concurrent error detection, self-checking networks, design for testability, and built-in self-test. Existing fault-tolerant systems will be studied.

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 853-3 Computer-Aided Design/Design Automation for Digital Systems
Algorithms for logic synthesis and physical CAD/DA. Emphasis on routing, placement, partitioning, and gate-level logic synthesis.
CMPT 891-3 Advanced Seminar
CMPT 894-3 Directed Reading
CMPT 898 MSc Thesis
CMPT 899 PhD Thesis

**Special Topics Courses**
In any semester a limited number of Special Topics courses may be offered subject to student demand and faculty availability. Details of any Special Topics courses will be posted several months before they are offered.

CMPT 881-3 Special Topics in Theoretical Computing Science
CMPT 882-3 Special Topics in Artificial Intelligence
CMPT 883-3 Special Topics in Programming Languages
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 887-3 Special Topics in Hardware Design

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**School of Engineering Science**
Location: 9851 Applied Sciences Building
Telephone: 778.782.4371
Director: A.M. Leung BS, MS, PhD (Case W Reserve), PEng
Graduate Program Chair: V. Cuperman MS (TI Bucharest), SB, MS, PhD (Calif), PEng

*Faculty and Areas of Research*
For a complete list of faculty see Engineering Science undergraduate section.

J.S. Bird - Statistical signal processing, system performance analysis, underwater acoustics and optics, radar, sonar and communications applications
C.R. Bolognesi - Fabrication and characterization of advanced compound semiconductor devices such as high electron mobility and heterojunction bipolar transistors, development of new materials and processes for high speed devices, optoelectronics, heterostructure fabrication and characterization; solid state phenomena
T.W. Calvert - Information processing in man and machine, biomedical applications, computer graphics and animation
J.K. Cavers - Mobile communications, signal processing, network protocols
G.H. Chapman - Microelectronics (fabrication, defect avoidance techniques, device physics), laser processing of materials, VLSI/wafer scale integration, computer aided engineering
V. Cuperman - Signal processing, speech coding and recognition, multimedia information compression, digital communications, digital signal processing structures and hardware
M.J. Deen - Microelectronics, high frequency electronics, semiconductor devices and circuits, device physics, device modelling
J.C. Dill - Computer graphics, computer aided design, user interfaces, intelligent design
D.A. George - Adaptive signal processing for communications and remote sensing systems
W.A. Gruver - Intelligent robotics, machine sensing and sensor-based control with applications to service robots, rehabilitation engineering, and manufacturing automation
K.K. Gupta - Computer vision, robotics, interpretation of three dimensional scenes, motion planning, spatial reasoning
R.H.S. Hardy - Computer networks, interaction between network and device technologies and network performance, wireless networks
W.S. Havens - Intelligent systems, constraint reasoning, artificial intelligence
P.K.M. Ho - Mobile communications, modulation and detection techniques, joint source and channel coding techniques, integration of stream and packet mode CDMA traffic
J.D. Jones - Applications of artificial intelligence to engineering design, design for manufacturing, finite element analysis, heat transfer and thermodynamics
A.M. Leung - Microelectronics, integrated circuit technology, integrated sensors, optical lithography
M. Parameswaran - Silicon micromachining, integrated microelectronics and micromechanical sensors and actuators, commercial integrated circuit process compatible sensors and actuators design, integrated circuit design, (application of micromachining for biomedicine and biotechnology) microelectronic processing, process and device simulation
S. Payandeh - Robot mechanics and control, modelling and control of grasping and manipulation, interpretation of contact forces and tactile images, kinematic geometry of mechanisms A.H. Rawicz - Reliability physics and engineering, very large scale integrated reliability, physical transducers, integrated sensors, film, technology, nonlinear optics, materials processing in microelectronics
M. Saif - Control theory, large scale systems, optimization theory and application to engineering systems
S. Stapleton - Passive radio frequency/microwave circuits, GaAs monolithic microwave integrated circuits, nonlinear radio frequency microwave devices, active radio frequency microwave circuits M. Syrzycki - Microelectronics, semiconductor devices, digital and analog VLSI design, integrated circuit technology, integrated sensors, integrated circuit fabrication defects, yield and reliability of VLSI integrated circuits
J. Vaisey - Image compression and processing, signal processing, digital communications

Associate Members
P.N.S. Bawa, Kinesiology
R.F. Frindt, Physics
L.J. Hafer, Computing Science
R.F. Hobson, Computing Science
T. Kameda, Computing Science
C.E. Love, Business Administration
J.B. Morrison, Kinesiology
T.L. Richardson, Kinesiology
K.L. Weldon, Mathematics and Statistics

Degrees Offered
Engineering Science offers two distinct Masters degrees, Master of Engineering (MEng), or Master of Applied Science (MASc) and a Doctor of Philosophy (PhD) degree.

Masters Program
The MEng program is designed for part-time study by practicing engineers and is based on a set of courses, normally offered in the evenings, plus a project performed in industry. The principal areas of study offered in the MEng program are electronics, communications and signal processing. The MASc, on the other hand, is a full-time program in which primary emphasis is on the thesis, rather than course work. It is more exploratory than the MEng, and the areas of study cover a greater range.

Admission
The normal admission requirement to the MEng and MASc program is a Bachelors degree in electrical engineering, computer engineering, engineering science or a related area, with a cumulative GPA of at least 3.0 (B) from a recognized university, or the equivalent. Note that the size of the faculty limits the number of MASc students.

Transfer from MEng Program to MASc Program
Normally transfer from MEng program to MASc program will be considered under the following conditions.

- Undergraduate GPA. Minimum undergraduate CGPA of 3.3 required.
- MEng GPA. On at least two courses, a minimum CGPA of 3.5

Degree Requirements - MEng Program

Course Work
MEng candidates are required to complete a minimum of 24 semester hours course work, at least 20 of which must be at the graduate level. Of the courses listed below, students must take ENSC 820. In addition, for those specializing in communications, ENSC 805 and 810 are required; for those in electronics, one of ENSC 851, 852 or 853 must be taken; and for students in intelligent systems and control, ENSC 801 must be taken.
A key component of the MEng program is a significant industrial project which integrates knowledge gained during the course of the student's graduate studies. This project is to be performed in the workplace, typically in industry or government laboratories. An appropriate level of design, documentation and reporting responsibility is required. The project would be expected to take a minimum of two person-months.

During the project, the student will receive academic supervision, as required, from the student's senior supervisor at the university, and day-to-day supervision from the student's manager, or a designated associate, in his or her place of work. The industrial supervisors, who will sit on the student's Supervisory Committee, will be appointed by the Faculty. In the case of very small companies, alternative arrangements will be made for supervision.

In addition to submission of a technical report at the completion of the project, the student will make an oral presentation to at least the Supervisory Committee and one other faculty member.

**MEng Fees**

Students registered in the Master of Engineering degree program may complete their program before they have paid the minimum total fee for a Masters degree. In such cases, an additional payment would be required prior to graduation to satisfy the minimum fee requirement of 6 full-time fee units. See Graduate Fees for more details.

**Degree Requirements - MASc Program**

MASc candidates complete 30 semester hours as a minimum of 12 semester hours course work, plus a thesis with a weight of 18 semester hours. The courses will, in consultation with the senior supervisor, normally be selected from the list below. Additional courses may be required to correct deficiencies in the student's background. The MASc thesis is based on an independent project with a significant research component. The student defends the thesis at an examination, in accordance with University regulations.

**Graduate Research Internship**

With the approval of their Supervisor Committee, students accepted in the MASc or PhD programs have the option of doing research internship in industry. The responsibility for finding a suitable internship rests with the student, though the senior supervisor will provide whatever guidance may be possible.

In addition to satisfying the degree requirements for their program, students wishing to take this option 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**

A minimum of two oral presentations for the Supervisory Committee (not including the 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 semesters, in the case of a MASc student, or four semesters, in the case of a PhD student.
Failure to comply
See Graduate General Regulations 1.8.

PhD Program

Admission
To qualify for admission to the PhD program a student must have a Masters degree in electrical engineering, mechanical engineering, physics, computer science or a related field, have submitted evidence that he or she is capable of undertaking substantial original research in Engineering Science, and have identified a faculty member willing to act as senior supervisor.

See Graduate Regulations for admission requirements for the PhD program.

Residence Requirement
Students will conform to the residence requirement as outlined in section 1.7.3 of the General Regulations.

Transfer from the Masters Program to the PhD Program
Proceeding to a PhD without first completing a Masters degree is not encouraged. However, a student may be admitted after at least 12 months in the MASc program if all the Masters requirements have been completed with a CGPA of 3.67 or better, outstanding potential for research has been shown, and approval of the student's Supervisory Committee, Graduate Program Committee and Senate Graduate Studies Committee been given.

Degree Requirements

Course Work
The minimum course requirement is 18 credit hours beyond those for the Masters degree. Six of these hours are for prescribed courses in the option in which the student is enrolled; alternatives require approval of the student's supervisory committee. At most six credit hours can be for senior-level undergraduate courses. At most six credit hours can be for directed studies. At least six of the credit hours must be taken within Engineering Science.

Qualifying Examination
Students take an oral qualifying exam at a time determined by his/her Supervisory Committee, normally between the 6th and 12th month from admission to the program. A sophisticated understanding of material in his/her major area of research, at a level normally associated with undergraduate and first year graduate studies is required. The possible outcome of the qualifying examination are pass; marginal (student may be required to take more courses, and is permitted a second and final opportunity to take the full qualifying exam within 12 months); fail (student withdraws from the program).

Thesis
Students define and undertake a program of original research, the results of which are reported in a thesis. The examining committee will be formed as defined in section 1.9.3 of the Graduate General Regulations. Students will conform to residence requirements as outlined in section 1.7.3 of the Graduate General Regulations. The senior supervisor shall be an Engineering Science faculty member approved by the departmental graduate program committee.

The student's progress will be reviewed each 12 months by a Supervisory Committee of three or more faculty members. At each annual review, the student presents the summary of his/her work to date. At the first such review, which takes place within 14 months of admission, the student will present a thesis proposal defining the intended research topic. Students not making satisfactory progress on their research topic, or failing to demonstrate satisfactory knowledge and understanding of recent publications in their general area of research, or failing to have their revised thesis proposal approved by the supervisory committee within 18 months of admission, may be asked to withdraw, as per section 1.8.2 of the Graduate General Regulations.

Research Seminar
A graduate student in the PhD program is required to present at least one research seminar per year as a part of regularly organized departmental seminars, including some based on completed or nearly completed thesis work. Students are expected to attend all the research seminars of the school.
**Graduate Courses**

**ENSC 801-3 Linear Systems Theory**

**ENSC 802-3 Stochastic Systems**
This course emphasizes the application of probability, random variables and stochastic processes. The main topics covered by the course are as follows: a brief review of probability and random variables; continuous and discrete random processes, including auto-correlation, cross-correlation and spectral density; AR and ARMA models; and an introduction to Markov chains and queuing theory. Areas of application include digital communication, speech and image processing, control, radar and Monte Carlo simulations. Prerequisite: graduate standing.

**ENSC 805-3 Techniques of Digital Communications**
This course discusses the fundamental techniques used in the physical layer of a digital communication system. The main topics are as follows: 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: permission of instructor.

**ENSC 810-3 Digital Signal Processing**
This course covers advanced digital signal processing techniques. The main topics are as follows: transform representations of signals: fast transforms (FFT, DCT); signal processing of band-pass signals and the Hilbert transform; random signals; the response of LTI systems to random signals; quantization noise in DSP; power spectrum estimation; an introduction to adaptive filters; linear prediction in DSP; and an introduction to hardware implementations of DSP algorithms. Prerequisite: ENSC 802 and a previous course in DP at the undergraduate level.

**ENSC 815-3 Signal Processing Electronics**
This course covers the techniques used to implement signal processing algorithms. Major topics include the following: complexity and performance in DSP; a review of algorithms, including those for DSP, speech and image processing; the Harvard and Modified Harvard architectures; pipeline and parallel processing; the architecture of several commercially available DSP chipsets and a vector signal processor; real time software and development systems; the mapping of algorithms onto arrays; vectorization of scalar algorithms; languages for parallel algorithms; dependence and signal flow graphs; systolic and wavefront arrays; the Hypercube and the Connection Machine. Prerequisite: permission of instructor.

**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. Prerequisite: permission of instructor.

**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. Prerequisites: 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 follows: 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 follows: the analysis of optical transmission media, including multimode and single mode technology; bandwidth limitations imposed by dispersive behaviour 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. Prerequisite: 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. Prerequisite: permission of the instructor.

ENSC 852-3 Analog Integrated Circuits
Integrated circuit (IC) technology, IC component models and analog circuit configurations. Computer aided design tools for circuit simulation and physical layout of ICs. Students are required to complete a project in which he/she will design, lay out, fabricate and test a semicustom IC using the fast turn-around IC fabrication facility at the School of Engineering Science.

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. Prerequisite: permission of the instructor.

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. Prerequisites: ENSC 370, 453, 495 or permission of instructor.

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: permission of instructor.

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 423 and 801.

ENSC 887-3 Vision for Robotics
A brief review of mathematical techniques and fundamental paradigms in machine vision - edge detection, shape from shading, stereopsis and motion, and their relevance in robotics. Specific applications in robotics, e.g., parts inspection, structured light techniques for obtaining 3-dimensional structure, camera calibration. Surface reconstruction and interpolation, surface/volumetric descriptions for modelling 3-dimensional objects.
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 889-3 3D Object Representation and Solid Modelling

ENSC 890-3 Advanced Robotics: Mechanics and Control
The course presents advanced approaches to modelling, control and applications of robot manipulators. Topics include kinematic modelling of manipulators using the theory of screw and screw operators; methods for obtaining dynamic model of manipulators; control of manipulators based on independent joint and multivariable control approaches; control of the contact forces between a manipulator and its environment; and adaptive control of manipulators. The course also discusses modelling and control of grasping/manipulation using a dexterous end-effector. Laboratory experiments are performed to complement the control theoretic part of the course. Prerequisite: ENSC 438, 801 or permission of the instructor.

ENSC 891-3 Directed Studies I

ENSC 892-3 Directed Studies II

ENSC 894-3 Special Topics I

ENSC 895-3 Special Topics II

ENSC 897 MEng Project

ENSC 898 MASc Thesis

ENSC 899 PhD Thesis

Courses Offered by Other Departments

Of particular interest to Engineering Science graduate students are these courses. Complete descriptions can be found elsewhere in this Calendar.

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

School of Kinesiology
Location: K9625 Shrum Science Centre
Telephone: 778.782.3573
Director: J.A. Hoffer BS (H Mudd College), PhD (J Hopkins) Graduate Program Chair: G.F. Tibbits BEd (McG), MS, PhD (Calif)

Faculty and Areas of Research
For a complete list of faculty, see Kinesiology undergraduate section.

E.W. Banister - Exercise and environmental physiology
P.N.S. Bawa - Neurophysiology
N.M.G. Bhakhan - Biology of human aging
T.W. Calvert - Neurosciences and mechanics; health and biomedical engineering
A.E. Chapman - Human biomechanics
A.J. Davison - Oxygen and the anti-oxidant vitamins - benefits and hazards
J. Dickinson - Motor learning and human factors
D. Goodman - Motor control
J.A. Hoffer - Neural control of movement and neural prostheses
C.L. MacKenzie - Motor control
R.G. Marteniuk - Motor control
I.B. Mekjavic - Environmental physiology
T.E. Milner - Modelling of the motor system; muscle mechanics
J.B. Morrison - Bioengineering and environmental ergonomics
W.S. Parkhouse - Exercise physiology and biochemistry
T.L. Richardson - Neurophysiology
M.P. Rosin - Environmental carcinogenesis
M.V. Savage - Thermoregulation: implications for the cardiovascular system
G.F. Tibbits - Cardiac biology
D. Weeks - Human factors; perception and cognition
H. Weinberg - Electrophysiology of information processing and complex behavior

Adjunct Professors
J.M. Berr, Environmental carcinogenesis
C. Chamberlin, Motor learning and control
B. Dunn, Environmental carcinogenesis
O. Eiken, Cardiovascular physiology
N.S. Longridge, Neuro-otology
J. McLarnon, Ion channels
T. Smith, Occupational health and safety
A. Stern, Medical and biophysical pharmacology
D.M. Stirling, Movement and health, older adults
S.S. Tsang, Cell biology of cancer
Admission
For admission requirements, see Graduate General Regulations, 1.3. At least 24 credit hours of appropriate undergraduate science courses are required.

MSc Program
Although the minimal requirements for the MSc are 12 semester hours of graduate courses and a thesis, most supervisory committees require more than the minimum. At least six of these credit hours must be from the graduate course offerings in Kinesiology. Courses will be chosen by the candidates' Supervisory Committee after consultation with the candidate. For further information and regulations, refer to the Graduate General Regulations.

Thesis
The school encourages early submission of the thesis proposal which will be circulated to faculty and resident graduate students, and formally presented for discussion at an open forum. Upon completion of the thesis, a formal defense of the work will be made to the Examination Committee at an open forum. The thesis proposal must precede the defense by at least four months. For further information and regulations, refer to the Graduate General Regulations.

Time Required for Degree
The requirements for the degree can normally be completed in six semesters.

PhD Program

Degree Requirements
Students are admitted to the program in an area defined and determined prior to acceptance by the School 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 Masters degree.

Study and research is designed to suit the background and research objectives of each student and may differ widely from student to student.

A student may be directed to acquire an adequate knowledge of a language which would be relevant to his/her studies.

The student will present two seminars plus a dissertation proposal on topics approved by the student's Supervisory Committee. They will be presented during the regularly scheduled school seminar time, normally between the first and sixth semesters. Both the timing and subject matter of seminars will be chosen by the Supervisory Committee in consultation with the student.

Comprehensive Examinations
At a time set by the Supervisory Committee, and within six semesters of residence, the student will be required to take written and oral comprehensive examinations. The Comprehensive Examination Committee will consist of a minimum of five people, at least three of whom must be faculty members of the School of Kinesiology, including the Senior Supervisor and the School Graduate Program Chair (or designate, who will act as the Committee Chair), plus one faculty member from outside the school.

Written
There will be four examinations.

Part One
One examination paper will be devoted to the student's field of specialization and will permit the student to explore extensively the chosen area of research.

This examination will typically be set by the senior supervisor of the student in consultation with the comprehensive examination committee and shall consist of the following format.
• an initial response, based on a four to six hour single sitting, closed book exam.
• a further three days during which the student will prepare and submit a response to the same question.

Part Two
The other three examinations will be based upon three supplementary and related areas chosen by the Comprehensive Examination Committee after consultation with the student.

Decision of the Examining Committee is by simple majority.

The outcome of each written examination will be pass, defer or fail. A deferral is used only in cases in which the examiner wishes to defer judgment until after the oral examination. A student who fails one examination must rewrite that component. A complete rewrite of all four examinations at a subsequent sitting will be required in the case of either failure of more than one or passing less than two of the written comprehensive examinations. An unsatisfactory performance on the second trial will necessitate withdrawal from the program.

Oral
A student can proceed to the oral examination when s/he has achieved a pass or deferred (maximum of two) grade on all four sections of the written examination. The oral examination will be held by the comprehensive examination committee. The student will be examined primarily in the areas covered by the written examination, but questions may range over the entire discipline.

The outcome of the oral examination shall be graded as pass, defer or fail. A student who fails the oral examination may retake the oral examination once. A deferral will result in specific conditions of remedial work or re-testing as determined by the examining committee. A deferred evaluation will not be converted to a pass unless the conditions set by the Comprehensive examination committee have been met within the established time frame. Otherwise, the deferral will lapse to a fail. The student cannot proceed to the dissertation proposal until the oral comprehensive examination has been passed.

Dissertation

Dissertation Proposal
Upon successful completion of the Comprehensive Examinations, the candidate will prepare a dissertation proposal which will be 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 will be 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.

Graduate Courses
Note: If the subject matter of a listed course has been previously completed with graduate credit, the course may not be taken again for credit.

KIN 805-3 Directed Studies
Seminar opportunity to develop under a faculty supervisor, special interest in considerable depth. Normally, KIN 805 may be taken not more than once for credit toward a degree.

KIN 806-3 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 807-3 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 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 810-3 Seminar in Exercise Biochemistry  
A detailed study of current topics in exercise metabolism including endocrine control of exercise metabolism, protein turnover in muscle, metabolic fatigue mechanisms in muscle, and cellular adaptation to training. Prerequisites: KIN 407, 410 and 430, or equivalent.

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 pH. Prerequisite: Introductory biochemistry and biophysics. KIN 821-3 Advanced Cardio-respiratory Physiology Detailed review of the current topics in cardio-vascular and respiratory physiology in health and disease. Prerequisites: KIN 305, 306 and 407.

KIN 825-3 Seminar - Learning and Motor Development  
Study selected topics from skill learning and motor performance.

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 835-3 Kinanthropometry and Human Development  
To provide detailed insights into stratagems and tactics in studying human size, shape, composition, proportion, maturation, gross function as related to normal and atypical growth, exercise, performance and nutrition.

KIN 840-3 Gross Body Mechanics  
To study in depth the selected aspects of the application and relevance of Newtonian mechanics to human gross bodily movement. Emphasis will be in terms of quantitative measurement of forces produced in human movement and their accuracy in both prediction and modification of human activity.

KIN 850-3 Cellular and Metabolic Control Systems  
Molecular mechanisms of cellular control, and their relationship to the integration of metabolism and physiological function. The course will cover mechanisms of hormone action, immunoregulation, carcinogenesis, and the principles of 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 Control Mechanisms in Human Physiology  
An intensive study of human neuro-muscular control and neuro-endocrine control phenomena. Prerequisites: KIN 305, 306 and 407.

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 Human Systems Modelling  
Systems analysis will be applied to a variety of physiological problems. Quantitative tools will be developed and computer simulation introduced.
KIN 875-3 Histo-Physiology
Histo-physiology, biochemical cytology and fine structural studies of mammalian tissue with emphasis on human organ system. The course will comprise seminars and research projects where cytochemical and fine structural techniques can be adopted to investigate the project. Prerequisite: KIN 336 or equivalent.

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 MSc Thesis
KIN 899 PhD Dissertation

School of Resource and Environmental Management
Location: 9671 Shrum Classroom Building
Telephone: 778.782.4659, 778.782.4968 Fax
Director: J.C. Day BS, MSc (W Ont), PhD (Chic)

Faculty and Areas of Research
Professors
J.C. Day BS, MSc (W Ont), PhD (Chic) - Resources management policy, water resources, impact assessment, Director of School
J.L. Knetsch BS, MS (Mich State), MPA, PhD (Harv) - Law and economics and the assessment of non-pecuniary values (joint appointment with Economics)
R.M. Peterman BSc (Calif), PhD (Br Col) - Fisheries population dynamics and management, simulation modelling, risk assessment, decision analysis

Associate Professors
A.M. Gill BA (Hull), MA (Alta), PhD (Manit) - Tourism, resource communities (joint appointment with Geography)
T.I. Gunton BA, MA (Wat), PhD (Br Col) - Regional resource and development planning
M. Jaccard BA, MRM (S Fraser), PhD (Grenoble) - Energy economics, modelling
M. M'Gonigle BA (Br Col), MSc (Lond), LLB (Tor), LLM, JSD (Yale) - Law and resources, institutional analysis, and international resource issues
P.W. Williams BA (Ott), MA (Wat), PhD (Utah State) - Tourism management, resort development, tourism policy and research, Director of Centre for Tourism Policy and Research

Assistant Professors
F. Gobas BSc, MSc (Amst), PhD (Tor) - Environmental toxicology
K. Lertzman BSc (Man), MSc, PhD (Br Col) - Forest ecology, long term forest dynamics, landscape ecology, conservation biology, global change
P. Wright BS (Lakehead), MS, PhD (Ohio State)

Associated Faculty
J.H. Borden - Biological Sciences
P. Copes - Economics
E.M. Gibson - Geography
A.S. Harestad - Biological Sciences
D. Moore - Geography
J.T. Pierce - Geography
J.G. Richards - Business Administration
A.C.B. Roberts - Geography
M.C. Roberts - Geography
Adjunct Professors

M. Barker BSc (Lond), MA, PhD (Tor) - Faculty Associate, Fachrichtung Geographie, Universitat des Saarlandes, Saarbrucken, Germany (tourism development strategies, landscape protection and park planning in mountain regions; environmental assessment)

W. Bell BA (Vic, BC), MA (W Ont) - Director of Forecasts and Special Projects, BC Energy and Mines, Victoria

M. Henderson BSc (Western), MSc (Manit), PhD (Br Col) - Research Scientist, Canadian Department of Fisheries and Oceans (fisheries management)

R. Hoos BSc (Calg), MSc (Vic, BC) - Director of Northern Affairs, Polar Gas, Calgary (environmental impact assessment)

A.J. Jordan BA (Hartwick Coll, NY), PhD (Maine) - Manager, Environmental Services, Vancouver Port Corporation, Vancouver, BC

M. Kent BA (S Fraser), MSc (Alta) - Senior Environmental Co-ordinator, BC Ministry of Transportation and Highways (impact assessment, environmental conflicts)

M. Margolick BA (C’nell), PhD (Br Col) - Consultant, BC Hydro, Vancouver, BC (utility resource planning and policy)

D. Marmorek BES (Wat), MSC (Br Col) - Director and partner, Environmental and Social Systems Analytsists Ltd. (ESSA), Vancouver BC (adaptive environmental assessment and management; ecological impacts of acid deposition)

D.W.I. Marshall BSc (Qu) - Regional Director, Pacific Western and Northern Region, Federal Environmental Assessment Review Office (environmental and social impact assessment)

A. Mackinnon BSc, MSc (Br Col) - Manager Forest Ecology, BC Ministry of Forests, Research Branch, Victoria, BC (forest ecology)

D. O'Gorman BA (Alta), MA (Br Col) - Deputy Commissioner, Commission on Resources and Environment, Victoria

J. O'Riordan BA (Edin), MA, PhD (Br Col) - Assistant Deputy Minister, Ministry of Environment, Victoria (regional resources planning)

K. Peterson BA (Br Col), MA (Northwestern) - Director of Planning, BC Hydro

F. Quinn BA (Tor), MA, PhD (Wash) - Director of Social Studies, Inland Waters Directorate, Environment Canada, Ottawa (water policy)

R. Robinson BA (Br Col) -Deputy Chairman, Federal Environmental Assessment Review Office (FEARO) (environmental impact assessment, legislation and process)

R. Strang BC (For) (Edin), PhD (Lond) - Associate Dean, Renewable Resources, British Columbia Institute of Technology (fire ecology, fire as a vegetation management tool)

A. Thompson LLB (Man), LLM (Tor), JSD (Col) - University of British Columbia Professor, Associate Council, Ferguson Gifford (natural resources, environment, energy)

Instructors

B. Newbury BSc, MSc (Manit), PhD (J Hopkins) - Stream Hydrologist, Newbury Hydralics Ltd., visiting professor (watershed analysis, hydrology of streams and lakes, river basin studies and river rehabilitation)

M. Roseland BA, MLibStudies (Wesleyan), PhD (Br Col) - Limited term assistant professor (sustainable development, planning theory, community economic development and planning practice)

The School of Resource and Environmental Management (REM) offers graduate programs that lead to either a professional Masters degree in resource management (MRM degree) or a PhD. Post-doctoral positions are also available. The school is designed for individuals with experience in private organizations or public agencies dealing with natural resources and the environment, or for recent graduates in disciplines related to natural resources. From time to time, courses are scheduled in the evening or week-long blocks to permit students to complete courses on a part-time basis.

Effective management of natural resources and the environment requires interdisciplinary skills as well as expertise in appropriate specialties. Problems in the management of forest, fisheries, energy, wildlife, mineral, water, tourism and agricultural resources are intensifying as competing demands increase. Expertise in traditional resource disciplines is needed and will continue to be in demand. Such experts are more effective managers if their background experience is supplemented by exposure to several other disciplines.

The school meets this need for deeper and broader graduate training in natural resources. It is intended for individuals with undergraduate training and experience in fields such as biology, engineering, forestry and geology as well as business administration, economics, geography, planning and other social sciences. Students take an integrated sequence of courses in complementary fields, take further courses in their specialized area, and do a research project involving more than one traditional discipline. This gives students increased familiarity and competence in understanding natural dynamics of resources, strategies and techniques of natural resource planning and management, and the biological, physical, social, economic and institutional
implications of resource decisions. Students also become familiar with various quantitative methods of analysis and aids to decision-making. This integrated, interdisciplinary emphasis has been part of the school since its inception in 1979.

Particularly in natural resources, it is important that an academic program stress problem-solving and critical thinking rather than focus primarily on subjects such as fisheries, economics or wildlife biology. To this end, the methods of integrating and synthesizing specialist approaches are stressed.

Faculty and student research evaluates effectiveness of existing natural resource management policies and develops new strategies. These strategies often emerge from research into the biological dynamics of natural resources, of the institutional, social, economic or public policy aspects of their management. Researchers apply a range of approaches including cost-benefit analysis, simulation modelling, legal and institutional assessment frameworks, and social surveys to address critical and emerging natural resource management issues. The school is primarily staffed by full time faculty. The courses, therefore, are designed specifically for resource and environmental management students. This full time faculty complement provides a strong focus and integration which significantly enhances the educational experience for graduate students. Considerable research is done in direct collaboration with resource management agencies to ensure implementation of research results.

Admission
Refer to the Graduate General Regulations for admission requirements.

Those with degree qualifications in fields not directly related but with extensive work experience in resource management are encouraged to apply.

Individuals will vary in their preparation for the various disciplines involved in the school. Therefore, admission to the school might be conditional upon the completion of certain undergraduate courses.

Application deadline: February 15.

Masters Program

Requirements
Seventy-three credit hours are required, 48 of which are from the required group plus 25 electives. With the director's approval, up to seven courses (35 credit hours) may be transfer credits from another institution. In exceptional cases, those with evidence of advanced education equivalent to one of the program courses from the required group may be allowed to waive that course by the program director, thereby reducing the total degree requirements to 68.

Prerequisite Courses
All students must be familiar with the material covered in an undergraduate course in Parametric and Nonparametric Statistics.

Required Courses
MRM 601-5 Natural Resources Management I: Theory and Practice
MRM 602-5 Natural Resources Management II: Advanced Seminar
MRM 611-5 Applied Population and Community Ecology
MRM 621-5 Economics of Natural Resources
MRM 631-5 Applied Geomorphology and Hydrology
MRM 641-5 Law and Resources
MRM 698-3 Field Resource Management Workshop
MRM 699-10 Research Project

and one of
MRM 642-5 Regional Planning I
MRM 644-5 Public Policy Analysis and Administration
Elective Courses**
Students normally select 25 credit hours (usually 5 courses) to strengthen an area of expertise. Possible electives are shown below under each area of specialization currently offered by the School of Resource and Environmental Management. However, any combination of elective courses may be taken.

Fisheries Management
MRM 612-5 Simulation Modelling in Natural Resource Management
*** MRM 613-5 Current Topics in Fisheries Management
MRM 615-5 Management of Aquaculture Resources
MRM 651-5 Project Evaluation
***ECON 863-4 Fisheries Economics
***ECON 864-4 Studies in Economic Fisheries Management
STAT 650-5 Quantitative Analysis in Resource Management and Field Biology

Regional Resource Planning
MRM 615-5 Management of Aquaculture Resources
MRM 644-5 Public Policy Analysis
***MRM 645-5 Resource Development Communities
MRM 646-5 Environmental and Social Impact Assessment
MRM 647-5 Parks and Outdoor Recreation Planning
MRM 651-5 Project Evaluation
MRM 655-5 Water Planning and Management

Energy Management
MRM 612-5 Simulation Modelling in Natural Resource Management
MRM 644-5 Public Policy Analysis and Administration
MRM 650-5 Energy Use and Policies
MRM 651-5 Project Evaluation
MRM 658-5 Energy Systems Modelling

Environmental Management
MRM 610-5 Management of Contaminants in the Environment
MRM 612-5 Simulation Modelling in Natural Resource Management
MRM 646-5 Environmental and Social Impact Assessment

Forestry
MRM 612-5 Simulation Modelling in Natural Resources Management
MRM 651-5 Project Evaluation
MRM 670-5 Introduction to Forestry
***MRM 671-5 Forest Ecology
***MRM 672-5 Silviculture
BISC 816-3 Biology and Management of Forest Insects

Tourism, Parks and Outdoor Recreation
MRM 647-5 Parks and Outdoor Recreation Planning
MRM 648-5 The Tourism System
MRM 649-5 Tourism Planning and Policy
MRM 652-5 Community Tourism Planning and Development

Business Administration
** BUS 512-4 Introduction to Business Finance
** BUS 528-4 Accounting
** BUS 536-4 Quantitative Methods in Management
** BUS 543-4 Introductory Graduate Marketing
** BUS 572-4 Organizations and Human Resource Management  
** BUS 822-4 Decision Theory  
** BUS 858-4 Business and Public Interest  
** BUEC 823-4 Business and Economic Forecasting

Co-operative Education Program  
MRM 690-0 Practicum I  
MRM 691-0 Practicum II

Additional Courses  
MRM 660-5 Special Topics in Resources Management  
MRM 661-5 Special Topics in Resources Management

** Other courses may be substituted with the approval of the director.

* May be taken with permission of the MBA Director.

***Subject to student demand and faculty availability.

**Joint Masters in Natural Resource Management and Business Administration**

A combined program leading to a joint Masters degrees in resource management (MRM) and business administration (MBA) is offered. This unique opportunity is designed to provide students with interdisciplinary skills and strategies for effective natural resource management.

Problems in the management of competing demands for tourism, forestry, energy, fisheries, water, mineral and agricultural resources are intensifying. Demand for expertise in traditional management disciplines thus continues to grow, and the capability of managers is greatly increased when their academic and professional experience encompasses an understanding of the roles various disciplines can play in addressing resource issues.

This program provides more in-depth opportunities and integrated education in study areas requiring natural resource and business management expertise. It gives students increased familiarity and competence in understanding not only the dynamics of natural resource systems, strategies and decision-making frameworks for their planning and management, but also an appreciation of the economic business implications of those strategies. It has a distinctly integrated natural resource and business management perspective.

The joint degree program will encourage areas of concentration in policy, marketing, accounting, finance and organizational behaviour. While students are exposed to topical issues related to specific subject areas such as tourism, fisheries, forestry and water management, the program stresses the development of integrated problem-solving and critical thinking skills.

Student research evaluates existing and develops new and effective natural resource management systems. Students apply quantitative and qualitative techniques derived from business and natural resource management disciplines to address these issues. Full time faculty members from the School of Resource and Environmental Management and the Faculty of Business Administration provide guidance and focus for these research initiatives.

**Admission Requirements**

Up to five students per year are admitted. Candidates must meet the entrance requirements of both the School of Resource and Environmental Management and Faculty of Business Administration graduate studies committees. Minimum admission requirements are as follows.

- a minimum undergraduate CGPA of 3.0 (or equivalent)
- acceptable score on GMAT test
- acceptable score (570 minimum) on TOEFL if native language is not English
- acceptable score (5 minimum) on Test of Written English
- successful completion of undergraduate courses in probability and statistics
• introduction to computer programming; differential and integral calculus
• three strong letters of reference, of which two should be provided by university professors familiar with the student's capabilities

**Degree Requirements**
This program provides a Masters in Resource Management (MRM) and a Masters in Business Administration (MBA). Students must successfully complete of 17 courses and a thesis.

**Courses**
The course requirements of an integrated combination of required and elective courses require 11 courses derived from the core of the traditional MRM and MBA programs. Additionally a minimum of three elective courses must be completed from the MBA program at the 800 level and another three electives must be chosen from MRM. These electives focus students' studies into areas of concentration. In conjunction with their MRM/MBA supervisory committee, each student will select three courses from a specific field of concentration in the MBA curriculum (e.g. accounting, finance, marketing, policy, and organizational behavior); as well as three elective courses within specialty areas in the MRM curriculum (e.g. tourism, forestry, energy management, regional resource planning, environmental management, and fisheries management).

The 11 required courses (subject to any approved substitutions) are as follows.

BUS 512-4 Introduction to Business Finance  
BUS 527-3 Financial Accounting  
BUS 536-4 Quantitative Methods in Management  
BUS 543-4 Introductory Graduate Marketing  
BUS 572-4 Organizations and Human Resource Management  
MRM 601-5 Natural Resources Management I  
MRM 602-5 Natural Resources Management II: Advanced Seminar  
MRM 611-5 Applied Population and Community Ecology  
MRM 641-5x Law and Resources  

*and one of*  
BUS 507-4 Managerial Economics  
MRM 621-5 Economics of Natural Resources  

*and one of*  
BUS 858-4 Business and the Public Interest  
MRM 644-5 Public Policy Analysis and Administration

It is strongly recommended that students take BUS 528 as an elective.

**Note**: with permission of the directors of the School of Resource and Environmental Management and the Master of Business Administration program,

- students may waive a maximum of three required courses if equivalent courses have been completed  
- in addition to any courses waived, students may substitute related electives for required courses.

**Thesis**
Students must complete a thesis in a research area deemed appropriate by a supervisory committee comprised of a minimum of one representative from each of the School of Resource and Environmental Management and the Faculty of Business Administration. The topic must be of cross-departmental interest. The thesis should demonstrate the researcher's comprehensive knowledge of the relevant literature, as well as his or her original contribution to knowledge in an area of concern to business and natural resource management. The thesis manuscript will be examined in a manner similar to that normally employed by the department of the thesis supervisor.
Application Process
Upon request, application materials will be mailed. The following submissions must be completed prior to consideration for entry.

- completed Simon Fraser University graduate application form
- the applicant's letter of statement of interest
- completed Faculty of Business Administration supplementary application form
- official transcript of undergraduate grades (mailed directly from the granting institution)
- three confidential letters of reference, at least two of which come from faculty members familiar with the student's work (forms are supplied for references)
- official transcript of GMAT score
- official transcript of Test of English as a Foreign Language (TOEFL) and Test of Written English (TWE) if student's first language is not English and their undergraduate degree(s) were not obtained at an institution in Canada, the United States, the United Kingdom, Australia or New Zealand where English has been the language of instruction

All complete applications must be submitted no later than February 1 of the year the student is seeking a September entry into the joint program.

Doctoral Program

Admission
All applicants must submit at the time of application a 500-1000 word Statement of Interest to describe how this program fits into career objectives and what they expect to get from the program.

To qualify for admission, an applicant must meet Simon Fraser University's Graduate General Regulations and 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 Masters degree in a related discipline
- excellent performance on the Graduate Record Exam (GRE). Students must send the GRE scores to the School of Resource and Environmental Management.

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 15 of the year of requested admission.

See Graduate Regulations for admission requirements for PhD program entry.

Transfer from the Masters Program to the PhD Program
A student in REM who shows exceptional ability may apply to transfer to the PhD program only if the first two requirements above are met, has been in the REM program for at least two but not more than four semesters, and if the applicable university regulations for transfers are met. Transfer applications must have the approval of the student's supervisory committee, REM Graduate Studies Committee, and the Senate Graduate Studies Committee. Transfer students will be eligible to earn only the PhD degree.

Degree Requirements

Courses
A minimum of 20 credit hours of graduate courses (excluding directed studies courses and MRM 601) are required, at least four of which must be in one of two disciplines in the student's research area plus two others (see curriculum below). Normally, students take 6-8 courses, approved by the supervisory committee, to prepare for comprehensive exams. Courses outside the school require approval of the REM Graduate Studies Committee.
Comprehensive Examinations
Normally within five full time semesters after admission to the PhD program (or to the MRM program in the case of transferal), students must take three written exams, one in each of environmental science, resource and environmental economics, and resource and environmental policy. These comprehensive exams ensure that REM PhD students have sufficient grounding in courses required at the Masters level, and thus have the depth of understanding essential to resource and environmental management. The REM Graduate Studies Committee is responsible for administering these exams. All three must be passed to remain in the PhD program. The possible outcome for each of qualifying exam are pass, marginal (student may be required to take more courses and is permitted a second and final opportunity to take the deficient exam(s) within one year), or fail. If, after the second try, any of the three exams is failed, the student must withdraw from the program.

Thesis Proposal
In conjunction with their supervisory committee, students develop a detailed written research proposal that defines the area and methods of intended research. Normally within six full time semesters after admission to the PhD program (or within four semesters if the student transferred from the MRM degree), a student must orally present a written thesis proposal at a departmental seminar. The candidate's supervisory committee attends along with other interested faculty and students. The oral examining committee is composed of the supervisory committee plus the REM Graduate Studies Committee Chair. This thesis proposal presentation determines whether the student's research abilities are adequate for PhD level research and whether the proposed research is feasible and has merit. The student must pass this presentation successfully to remain in the program. Those who do not make satisfactory progress on their research topic, or who fail to demonstrate adequate knowledge and understanding of recent publications in their research area, or whose revised thesis proposal isn't approved within the time limit given at the start of this section, will be required to withdraw from the PhD program.

A written thesis based on a student's original research is the final requirement, and must include aspects of at least two disciplinary areas (such as ecology and economics, or toxicology and law). The topic must be approved as noted above, and the student's progress will be evaluated annually according to the Graduate General Regulations. To graduate, students must successfully complete a thesis defence, following the usual University format. All other general requirements for a PhD will be followed as outlined in the Calendar.

Residence Requirement
A PhD candidate must be registered and in residence at Simon Fraser University for the minimum number of semesters as described in the Graduate General Regulations.

Curriculum
All REM PhD students must complete at least four graduate courses as follows.

MRM 801-5 Principles of Research Methods and Design in Resource and Environmental Management
MRM 802-5 Institutional Design and Decision Making for Environmental Management
At least one course in the student's primary field
At least one course in the student's secondary field
All courses in the School can be taken for credit toward a PhD degree except MRM 601 and directed studies courses.

Co-operative Education
A REM Co-operative Education program allows students to work in a resource management agency (government or private) to gain professional experience in applied problem solving. The Co-op program is optional, but in many cases the work can lead directly into the student's MRM 699 Research Project.

Graduate Courses
REM 601-5 Natural Resources Management I: Theory and Practice
Disciplinary and interdisciplinary theory and principles for natural resources analysis and planning. Not for credit toward a PhD in Resource and Environmental Management.

REM 602-5 Natural Resources Management II: Advanced Seminar
A review of selected policies, programs or institutions related to natural resources management. Prerequisite: 8 required MRM courses or permission of instructor.
REM 610-5 Management of Contaminants in the Environment
Application of scientific methodology and concepts regarding pollutant behaviour and effects in environmental 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. Prerequisites: MRM 611 or permission of the instructor.

REM 613-5 Current Topics in Fisheries Management
Current methods of evaluation of fisheries management problems, with emphasis on the biological aspects; case studies of world fisheries. Prerequisites: MRM 611 and MRM 612 or permission of instructor.

REM 615-3 Management of Aquaculture Resources
Environmental, political, and social issues related to siting and operation of aquaculture facilities. Topics drawn from coastal zone management, regional planning, public policy analysis, environmental and social impact assessment, resource law and ecology.

REM 621-5 Economics of Natural Resources
Application of economic theory to natural resources management problems with a view to assessing existing and alternative policies. Includes theoretical analysis of concepts such as resource pricing, market failure, taxation, etc., and management strategies for specific resources such as forestry, fisheries and environment.

REM 631-5 Applied Geomorphology and Hydrology
A review of geomorphic and hydrologic principles; the morphology of drainage basins; selected case studies.

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 634-5 Slope Stability and Snow Avalanches in Resource Management
Impact of slope failure and snow avalanches in mountainous environments. Technical counter measures, zoning techniques, and the appraisal of acceptable risk are discussed within different geologic, climatic, and socio-economic contexts. Prerequisite: MRM 633 or permission of instructor.

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 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
Evaluation and application of current methodologies for social, economic, and biophysical impact assessment. Prerequisites: MRM 601, 611, 621, 642, or permission of instructor.

REM 647-7 Parks and Outdoor Recreation Planning
The course will outline resource assessment, planning, and management methods related to parks and outdoor recreation.

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. Prerequisites: permission of instructor.

REM 650-5 Energy Management and Policy
Integration of energy supply and energy demand management to formulate cohesive and efficient energy policies; topics include thermodynamics, modelling, conservation, energy pricing, oil markets, project assessment, the environment and energy planning in developing countries.

REM 651-5 Project Evaluation
The role, limitations and methods of benefit cost analysis. Different measurement techniques will be applied to the estimation of a range of benefits and costs. Market and nonmarket allocations will be considered. Prerequisites: ECON 200, MRM 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. Prerequisites: 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. Prerequisites: MRM 601, 621, 631, and 646, or permission of instructor.

REM 658-5 Energy Systems Modelling
Training and practical experience in the use of the range of techniques for modelling energy systems: linear programming, econometrics, input-output, energy service models, integrated systems. Prerequisites: MRM 621 and 650.

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 662-5 Special Topics in Resources Management
Special topics in areas not currently offered within the offerings of the Resource and Environmental Management program.

REM 663-5 Special Topics in Resource Management
Special topics in areas not currently offered within the Resource and Environmental Management program.

REM 664-5 Special Topics in Resource Management
Special topics in areas not currently offered within 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 concerns. Principles are illustrated with reference to contemporary forestry issues. Prerequisite: MRM 611 or permission of instructor.

REM 671-5 Forest Ecology
Principles of ecology of trees and forests applied to evaluation and management of forest ecosystems.

REM 672-5 Silviculture
Principles and practice of silviculture; lecture and laboratory, with added emphasis on the state of the art in British Columbia. Prerequisites: MRM 671, equivalent course, or permission of instructor.

REM 690-0 Practicum I
First semester of work experience in Resource and Environmental Management's co-operative education program.

REM 691-0 Practicum II
Second semester of work experience in Resource and Environmental Management's co-operative education program.

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 problem in resource administration or allocation, resulting in the preparation of a formal paper and an oral defense.

REM 801-5 Principles of Research Methods and Design in Resource and Environmental Management
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.

REM 802-5 Institutional Design and Decision Making for Environmental Management
Students will develop a sophisticated understanding of the institutional structure and methods of decision making in natural resource and environmental management. This course complements material covered in a variety of Masters level courses.

REM 899 PhD Thesis
Department of Archaeology
Location: 9635 Multi Purpose Complex
Telephone: 778.782.4727
Chair: J.C. Driver, MA (Camb), PhD (Calg)
Graduate Program Chair: J.D. Nance BA, MA (Calif), PhD (Calg) 778.782.4420

Faculty and Areas of Research
For a complete list of faculty, see Archaeology undergraduate section.

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
A.C. D’Andrea - Archaeobotany, bioarchaeology, origins of agriculture, paleoeconomy, Japan, Egypt
J.C. Driver - Zooarchaeology, cultural ecology, Western Canada, American Southwest, United Kingdom
K.R. Fladmark - Northwest North America, geoarchaeology, paleoindian, quaternary studies
B.M.F. Galdikas - Primate behavior, orangutan research and conservation
B.D. Hayden - Lithics, ethno-archaeology, mesoamerica, hunter/gatherers, cultural ecology, method and theory
P.M. Hobler - Northwest Coast, southwest, field techniques, historic components at native sites
J.D. Nance - Statistical archaeology, southeast North America, method and theory
D.E. Nelson - Archaeometric methods, stable isotope analysis, radiocarbon dating by accelerator mass spectrometry
R. Shutler Jr. - Paleoanthropology of East and Southeast Asia and Japan, prehistory Oceania, paleoindian New World
M.F. Skinner - Physical anthropology, skeletal biology, forensic anthropology, paleoanthropology

Adjunct Faculty
A.D. McMillan - Canadian archaeology and ethnography, particularly Northwest coast, native arts

Associated Faculty
J.M. D’Auria, Chemistry
D.J. Huntley, Physics
R.W. Mathewes, Biological Sciences

Areas of Study
The department offers specialization in archaeology, physical anthropology, ethnology, archaeometry, and zooarchaeology. The student is expected to gain a comprehensive understanding of the discipline. In so doing, the student should strive to acquire a general knowledge of world prehistory, physical anthropology, and archaeological theory and method, in addition to obtaining knowledge and expertise in particular areas of research interest.

Degree Requirements
A distinction is made between students who are enrolled in the program and students who have been formally advanced to degree candidacy. A candidate is a student who has successfully completed the requirements for advancement to candidacy (defined below). Normally, advancement to candidacy will take place by the time the Simon Fraser University residence requirement is fulfilled, but not later than the end of the ninth semester after admission for PhD students and not later than the end of the sixth semester for MA students.

MA Program
The MA program consists of the following sequential steps: course requirements, thesis prospectus, colloquium presentation, advancement to candidacy, and thesis completion and defence.

Course Requirements
In addition to the thesis, the normal course requirements for the MA degree consist of a minimum of four graduate courses including ARCH 871. Students may be required by their committee to take additional courses. Students are also required to take ARCH 872/873 each semester the course is offered. Credit for ARCH 873 does not constitute part of the normal course requirement for the MA degree. Grading for these 872/873 courses will be restricted to satisfactory/unsatisfactory (S/U).
Advancement to Candidacy
The requirements for advancement to candidacy are as follows.

- Completion of three of the minimum four graduate courses.
- Preparation of thesis prospectus. The purpose of the prospectus shall be to discuss the proposed research and general background relevant to the research. The prospectus is expected to be 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 supervisory committee, the student will present a colloquium, the topic of which shall be the substance of the prospectus.

The colloquium is not to be considered a defence of the prospectus, per se, but a means whereby the student may benefit from the collective expertise of the department.

PhD Program
The PhD program consists of the following sequential steps: course requirements, comprehensive exam, thesis prospectus, colloquium presentation, advancement to candidacy, and thesis completion and defence.

Course Requirements
Course requirements for the PhD degree are to be determined in consultation with the student's Supervisory Committee.

In addition to the comprehensive exam and thesis, normal course requirements for the PhD degree consist of a minimum of three graduate courses including ARCH 871. Students may be required by their committee to take additional courses. Students are also required to take ARCH 872/873 each semester the course is offered. Credit for ARCH 873 does not constitute part of the normal course requirements for the PhD degree. Grading for these 872/873 courses will be restricted to satisfactory/unsatisfactory (S/U).

Comprehensive Exam
Students must write a comprehensive examination, prior to candidacy, to test general knowledge in archaeology and in three regional or topical areas selected by the supervisory committee in consultation with the student. Grading will be on a pass/fail basis but the examination or parts thereof may be repeated once, at the discretion of the department.

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 purpose of the prospectus shall be to discuss the proposed research and general background relevant to the research. The prospectus is expected to be submitted to the Supervisory Committee and approved before step 3 is taken.
- After approval of the thesis prospectus, and after consultation between the student and his 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 collective expertise of the department.

Thesis
After the above, students advance to candidacy and will complete and defend the thesis. The defence topic should be the thesis itself and related matters.

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 candidate's field work or reading, he/she will be required to attain the necessary language proficiency.
Graduate Courses

ARCH 840-3 Seminar in Zooarchaeology
Intensive examination of certain key topical areas of faunal studies in archaeology.

ARCH 871-5 Selected Topics in 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 875-5 Seminar in Paleoanthropology
Selected topics in human osteology, physical anthropology, and fossil humans.

ARCH 876-5 Selected Topics in Archaeological Method
Seminar focusing on examination of archaeological methods from historical/mathematical/statistical perspective.

ARCH 881-5 North American Prehistory

ARCH 882-5 African Prehistory

ARCH 883-5 Mesoamerican Prehistory

ARCH 894-3 Special Topics in Archaeology
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 in Archaeology
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 Readings in Archaeology

ARCH 897-5 Field Work Seminar
Seminar in field research. Participants will present their recent field work to the class for critical discussion.

ARCH 898 MA Thesis

ARCH 899 PhD Thesis

School for the Contemporary Arts
Telephone: 778.782.3363
Fax: 778.782.5907
Director: O. Underhill BMus (Vic, BC), MA, (NY State)
Graduate Program Chair: D. Zapf BMus, MA (Vic, BC)

Faculty and Areas of Research
For a complete list of faculty, see School for the Contemporary Arts undergraduate section.
E.W. Alderson - Interdisciplinary art history and theory, dance theory and aesthetics, cultural theory  
S.A. Alo - Choreography, text based dance theatre, interdisciplinary performance  
C.V.A. Browne - Poetry, fiction, screenplay, documentary and innovative film production, poetics, interdisciplinary performance  
A. Clay - Drawing, painting, text work, installation, contemporary feminist and critical theories  
H. Dawkins - Social history of 19th century visual art, women's history, feminist, psychoanalytic and cultural theory  
M. Diamond - Acting, directing, dramaturgy, creative writing  
M. Easter - Ballet, modern dance, body therapies, choreography, dance education, dance history  
J. Garay - Choreography, performance, costume design  
I. Garland - Choreography, dance history, movement analysis, criticism  
M.S. Gotfrid - Electroacoustic music, film-sound design and scoring  
R. Groeneboer - Film direction, editing and script writing, film production  
P. Gruben - Directing, scripting, editing: dramatic feature films  
B. Hegland - Lighting design, stage design, theatre technology, theatre architecture  
R. Komorous - Composition, music theatre, advanced theory of 20th century music  
J. Levitin* - Film production and theory, independent film making, feminist film criticism, ideological studies, third world film, comedy, directing, women's studies  
J. Macfarlane - Lighting design for the stage, theatre technology  
D. MacIntyre - Music composition, interdisciplinary composition and performance, collaboration  
C. Prophet - Choreography and performance  
A. Ramsden - Video, photography, installations, public art, image and text, critical theory, feminist theory  
A. Smith - Drumming, jazz, popular music and accompaniment  
M. Smith - Film and video production  
G. Snider - Sculpture, installation, public art, contemporary art theory  
P. Stella - Acting, directing, playmaking, dramaturgy  
B.D. Truax** - Acoustic communication, electroacoustic music and computer music (composition and software development), world soundscape studies  
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 - Installation, photography, multi-media image and text, contemporary theoretical issues concerning representation and cultural politics  
D. Zapf - Music and interdisciplinary history, critical theory, feminist theory  

*joint appointment with Women's Studies  
**joint appointment with Communication  

MFA Program  
The program leading to the degree of Master of Fine Arts in Interdisciplinary Studies is designed to provide an advanced level of professional training for artists in the fields of music, dance, theatre, film, and visual arts. Its goals are the furthering of 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 within an historical perspective.  

Course provide flexibility to accommodate individual differences in background and artistic goals, with emphasis throughout the program on the production of creative work in an interdisciplinary context.  

Admission Requirements  
Applicants must hold a BFA, BA, BMus or BEd in one or more of the art disciplines, with a CGPA of 3.0 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 undergraduate courses in music, dance, theatre, film, or visual art, or substantial experience in these fields outside the university. For the consideration of the Admissions Committee, applicants must submit a portfolio of their work in the form of audio or video tapes, scores, slides, films, plays or academic papers. Performing artists may be asked to audition.  

Candidates with deficient qualifications must take undergraduate courses specified by the Admissions Committee, in a qualifying year, to remedy the deficiency. 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**

Master of Fine Arts candidates must complete a minimum of 40 semester hours, including 30 hours of course work and a project, which is the equivalent of 10 hours. In most cases, this project will be an art work presentation, accompanied by appropriate documentation, completed with an oral defence. The project plus the required interdisciplinary seminars account for 20 hours; of the remaining 20 hours, 15 will normally be from within the school.

*Students must complete all of*

- FPA 811-5 Interdisciplinary Graduate Seminar I
- FPA 812-5 Interdisciplinary Graduate Seminar II
- FPA 898-10 Master of Fine Arts Graduating Project

*plus three 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

*plus five units selected from upper division or graduate courses outside the student's main area of concentration or outside the School for the Contemporary Arts.*

*Work involving substantial investigation of another discipline, an upper division or a graduate course from another department could substitute FPA 887 or 889, with the supervisory committee's permission.

**Graduate Courses**

- **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 Seminar II**
  Continuation of FPA 811. Prerequisite: FPA 811.

- **FPA 883-5 Studio in FPA I**
  Intensive studio work, concentrated in a particular art discipline, but with opportunity to involve interdisciplinary materials and techniques.

- **FPA 885-5 Studio in FPA 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 semester to semester.

- **FPA 889-5 Directed Study in Fine and Performing Arts**

- **FPA 898-10 Master of Fine Arts Graduating Project**

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**School of Criminology**

Location: 2630 Diamond Building
Telephone: 778.782.4762/3213
Director: N.T. Boyd BA (W Ont), LLB, LLM (O Hall)
Graduate Program Director: R.J. Menzies BA (York), MA, PhD (Tor) 778.782.4763/4762

*Faculty and Areas of Research*
For a complete list of faculty, see Criminology undergraduate section.
E.O. Boyanowsky - Community standards and the law, environment, emotion and behaviour, 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 - Feminist jurisprudence, social science evidence in court, self regulation and the sociology of professions, white collar and corporate crime, criminal law, procedure and evidence
B. Burtch - Penology, corrections, sociology of law, social control, reproduction and law, state theory, electronic monitoring of offenders
D.E. Chunn - Feminism, law and state, law, ideology and the family, sociology of criminology and law, crimes of politicians, police, and judges, historical sociology of crime, law and social welfare, media representations of women, law and the state
R.R. Corrado - Comparative juvenile justice, terrorism, evaluation research, administration of justice in Canada
D.F. Cousineau - Juvenile justice, deterrence, sociology of criminological research
J.W. Ekstedt - Corrections, criminal justice policy analysis, criminal justice administration and planning policy research, political bureaucratic decision-making, staff development, offender rehabilitation
K. Faith - Feminist theory, gender/race/class relations and crime, media imagery of female criminals, philosophical/historical criminology, female incarceration, medieval to 20th century witch hunts, political economy and social problems
E.A. Fattah - Punishment, corrections and deterrence, victimology, ecological criminology
W.G. Glackman - Research methodology, multivariate statistical techniques, forensic psychology, perceptions of crime
R.M. Gordon - Mental health law, young offenders and police, political economy of crime, sociology of law
C.T. Griffiths - Corrections, 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
D. Lacombe - Sociology of law and deviance, gender relations, political sociology
J. Lowman - Critical criminology, prostitution, sociology of social control
R.J. Menzies - Assessment of dangerousness, sociology of law, critical criminology, psychiatry and law, dangerousness and violence, clinical and judicial decision-making, history of crime and mental health, research methods
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
C. Singer - Justice and world communities, native studies, Third World, professional ethics, social impact assessment
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 Associate Members
J.R.P. Ogloff Psychology
C.D. Webster Psychology

Degrees Offered
The School of Criminology offers graduate programs leading to the MA and PhD degrees.

Areas of Study and Research
The graduate programs in Criminology concentrate on advanced academic study and have a strong research emphasis. The broad goal of the program is to prepare students for careers in the teaching of criminology, in criminological research and in policy-making in criminal justice.

The emphasis of the graduate programs is to foster a spirit of inquiry and creative endeavour among the students, to develop their critical and analytical capabilities, and to train them in the various techniques of criminological research.

The graduate programs focus on five major (core) areas.

The Phenomena of Crime
Theories of Crime
Criminal Justice Policy Analysis
Methods
Law and Social Control

Criminology Research Centre
(See Centres and Institutes)
Feminist Institute for Studies on Law and Society
(See Centres and Institutes)

Institute for Studies in Criminal Justice Policy
(See Centres and Institutes)

MA Program

Admission
Students holding a baccalaureate or the equivalent from a recognized institution must meet the general admission requirements for graduate studies (see sections 1.3.2. and 1.3.8 of the Graduate General Regulations).

Normally, an applicant should have at least one course in social science research methods and one undergraduate introductory course in statistics.

Applicants must forward official copies of their transcripts and to send a short statement of interests. This statement should include a description of previous employment, research or other work relevant to the candidate's proposed graduate studies. In all cases, letters of recommendation from people who know the candidates and are familiar with their work will be required.

A cheque or money order for $40 (Canadian), made payable to Simon Fraser University, should be submitted with the application form.

Deadlines for completed applications are as follows.

For entrance commencing Fall semester - February 1

Applicants will be informed of the outcome as soon as possible thereafter.

Degree Requirements
Candidates for an MA degree must complete the following requirements.

- take a minimum of eighteen (18) semester hours of course work consisting of
  - Research Methods I (3 semester hours)
  - either Research Methods II (3 semester hours) or Research Methods III (3 semester hours)
  - Theories of Crime I (3 semester hours)
  - Proseminar (3 semester hours)
  - at least six (6) hours selected from additional graduate curriculum offerings
- satisfactory completion and oral defence of an original MA thesis

The thesis will not normally be more than 100 pages in length, including bibliography and footnotes, but exclusive of appendices.

Satisfactory Performance
The progress of each candidate will be assessed at least twice a year by the school (Spring and Fall). Any student who performs unsatisfactorily will not be permitted to continue in the program, subject to the procedure for the review of unsatisfactory progress described in Graduate General Regulation 1.8.2.

PhD Program

Admission
The minimum university requirements for admission to the Doctoral program are provided in the Graduate General Regulations (section 1.3.3.)

Normally, an applicant should have at least one course in social science research methods and one undergraduate introductory course in statistics.
Direct admission may be approved for persons with a Masters in Criminology, a Masters in a discipline other than Criminology and, under exceptional circumstances, with an undergraduate degree or its equivalent provided that a CGPA of at least 3.5 has been maintained.

Applicants must submit a statement of research interests and at least two examples of previous academic work.

In exceptional circumstances, undergraduate degree holders (or equivalent), may be admitted to this program if they meet the general University regulations for entry with a BA, have demonstrated a capacity for original research at the undergraduate level, and are recommended for direct entry by at least two Criminology faculty members eligible to teach or supervise in the PhD program. Those who meet the GPA requirement and have demonstrated research ability through field experience in criminal justice may also be considered on recommendation of at least two faculty members involved in the program. Those so admitted will have their status reviewed by the end of the second semester following admission. The Graduate Program Committee will determine the candidate's ability to complete the PhD by direct entry. The student will either be confirmed as an approved candidate for the PhD in Criminology or directed to seek admission the Masters program.

Because many disciplines are allied to Criminology, the Graduate Program Committee reserves the right to determine equivalent courses already taken in the applicant's Masters program. At the time of admission, the Graduate Program Committee may waive up to 15 semester hours of requirements.

A cheque or money order for $40 (Canadian), made payable to Simon Fraser University, should be submitted with the application form.

Deadlines for completed applications are as follows.
For entrance commencing Fall semester - February 1

Applicants will be informed of the outcome immediately thereafter.

Note: Those with two consecutive degrees from the School of Criminology at Simon Fraser University will not normally be admissible to the PhD program.

Degree Requirements
PhD candidates must take a minimum of 33 semester hours consisting of

- at least three Research Methods courses (9 semester hours)
- Theories of Crime I (3 semester hours)
- Proseminar (3 semester hours)
- at least eighteen (18) hours selected from additional curriculum offerings
- achieve satisfactory completion and oral defence of an original PhD thesis

A maximum of nine semester hours of course work may be taken in another department or university on approval of the student's supervisory committee and the Graduate Program Committee. These courses may be accepted as partially meeting the requirements for any courses in the PhD program.

All students must write comprehensive exams in two of the five core areas of the graduate program core curriculum. Normally, students will be expected to finish courses and comprehensives within two years of entering the program.

Note: While two of the course areas are entitled "methods" and "theory", methodological and theoretical issues are relevant to all of the core areas.

Dissertation Procedures
In the semester after the comprehensive examinations have been passed, each candidate develops a thesis prospectus based on original research. The prospectus defines the proposed investigation and demonstrates the relationship between it and existing scholarship. It is presented to the supervisory committee for approval. On approval, the thesis proposal is circulated to faculty and resident graduate students and presented at a school colloquium.
The thesis is defended in oral examination by an examining committee constituted under the provisions of Graduate General Regulation 1.9.3.

**Satisfactory Performance**
The progress of each candidate is assessed at least twice a year by the school (Spring and Fall). Students who perform unsatisfactorily may not continue in the program, subject to the procedure for review of unsatisfactory progress described in Graduate General Regulation 1.8.2.

**Graduate Courses**

**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 I**
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 Policy Analysis II**
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. The course will emphasize the systems approach in criminal justice policy planning. Program evaluation techniques will be applied to the major types of planning and program initiatives taken within or across criminal justice systems.

**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 rigour 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. Prerequisites: CRIM 860, 861, 862, or by permission of the instructor.

CRIM 870-3 Selected Topics
Concentrated studies in areas of student specialization.

CRIM 871-3 Directed Readings
Intensive readings under the supervision of a faculty member, in areas of interest related to the student's program.

CRIM 898 MA Thesis
CRIM 899 PhD Thesis

Department of Economics
Location: 3602 Diamond Building
Telephone: 778.782.3562/3508
Chair: (to be announced)
Associate Chair: (to be announced)
Graduate Program Chair: (to be announced)

Faculty and Areas of Research
For a complete list of faculty, see Economics undergraduate section.

D.W. Allen - Microeconomic theory, industrial organization
J. Arifovic - Macroeconomics, monetary theory, learning and adaptation in economics
L.A. Boland - Economic theory and methodology
J.F. Chant - Macroeconomics, monetary theory, economics of financial markets
P. Copes - Fisheries economics, political economy, regional development
J.W. Dean - Banking and monetary theory, macroeconomics, international finance
D.J. DeVoretz - Development, economic history, demography economics
S.T. Easton - International trade, economic history
B.C. Eaton - Microeconomic theory, industrial organization, location theory
J. Friesen - Labor
S. Globerman - Economic theory and policy
P. Gomme - Macroeconomics, quantitative theory
R.R. Grauer* - Finance
H.G. Grubel - International trade and finance, economic policy
R.G. Harris - International economics, economic theory
T.M. Heaps - Natural resources, regional, mathematical economics
J.P. Herzog* - Managerial economics, finance
R.A. Holmes** - Quantitative methods, time series models
R.A. Jones - Monetary theory, macroeconomics, finance
M. Kamstra - Econometric theory, applied finance
P.E. Kennedy - Econometrics, macroeconomic theory
M.H. Khan - Economic development, agricultural economics
J.L. Knetsch*** - Natural resources, law and economics, environmental and experimental economics
M.A. Lebowitz - Political economy, economic thought
R.G. Lipsey - Economic growth, industrial organization, international trade policy
D.R. Maki - Labor economics, statistics
J.M. Munro - Transportation, regional and urban economics
N.D. Olewiler - Natural resources, environmental economics
K. Pendakur - Labor, public finance
C.G. Reed - Economic history
N. Schmitt - International trade, theory, industrial organization
R.W. Schwindt* - Industrial organization, international trade, public policy toward business
Z.A. Spindler - Public choice

*joint appointment with Business Administration, home department - Economics
**joint appointment with Economics, home department - Business Administration
***joint appointment with Resource and Environment Management, home department - Resource and Environment Management

Graduate Academic Program
This program offers course work and research supervision in macroeconomic theory, microeconomic theory, econometrics, economic development, economic history, international economics, industrial organization, industrial relations, labor economics, monetary economics, regional economics, resource economics, finance, financial economics, history of economic thought and methodology, management science, and marketing. Courses and research may be taken within other areas of economics and business administration or related disciplines by special arrangement, with the approval of the Supervisory Committee and the Graduate Studies Committee. Certain graduate courses are offered jointly with the Faculty of Business Administration.

MA Program

Admission Requirements
University admission requirements are given in the Graduate General Regulations section. In addition, the department requires that for clear admission the applicant must hold a Bachelors 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 allows three options.

- Thesis Option - core work plus two ECON or BUEC graduate courses and an original thesis.
- Extended Essay Option - core work plus four ECON or BUEC graduate courses, (including ECON 836-4) and two extended essays.
- Project Option - core work plus five ECON or BUEC graduate courses, (including ECON 836-4) and a research project.
Normally, every MA program will include the following.

Core Course Work
Students must achieve satisfactory competence in microeconomic theory, macroeconomic theory, quantitative methods and mathematical economics. Except where students have successfully undertaken equivalent graduate work at another university, the microeconomics requirements will be met by completing either ECON 802 and 803, or ECON 804. The macroeconomics requirements may be met by completing either ECON 805 or ECON 806. Students with an inadequate background in either microeconomics or macroeconomics may be required to take undergraduate courses (no graduate credit) in these subjects before attempting either ECON 802 or ECON 805. The mathematical economics requirement is met by satisfactorily completing ECON 798 in addition to the normal course requirements required for the MA degree. Alternatively, students may challenge the course by taking a pre-announced screening examination on the material covered in this course. This examination will normally be written in the first week of the first semester in the program. Grading for ECON 798 is restricted to Satisfactory/Unsatisfactory (S/U). The quantitative methods requirement will be met by completing ECON 837.

Area Course Work
Students must complete a minimum of eight (thesis option), sixteen (extended essay option), or twenty (project option) additional credits of approved graduate course work which must include ECON 836 if either the extended essay or project option is chosen. Other courses may be drawn from ECON and BUEC graduate courses, or, with permission of the Graduate Program Chair and Senior Supervisor, from graduate Business Administration courses or other subjects.

Research and Writing Ability
Evidence of research and writing ability met by the satisfactory completion of one thesis, two extended essays or one research project. The form of these research papers must meet the standards set out in the Graduate General Regulations section.

Oral Examination
An oral examination covering the student's written research, in particular, and program, in general, as outlined in the Graduate General Regulations section.

Research Workshop
ECON 900 (research workshop) is a required course for all students who are on campus and registering in ECON 990 or 991 (thesis).

PhD Program

Admission Requirements
For admission requirements, refer to the Graduate General Regulations section. In addition, the department requires an MA with graduate work in the core areas equivalent to ECON 802, 805, 835 and 836. Any deficiency in the core areas must be met by taking 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 core and credit requirements for the MA (60 credits beyond the BA honors is required for such a PhD program).

Degree Requirements
The PhD 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 approved courses amounting to a total of at least thirty semester hour credits beyond the requirements listed above for the MA in Economics. Students specializing in Economics must include ECON 803-3, 804-4 and 806-4 as part of their course work. Students specializing in Economics and Business Administration must include ECON 803-3 and 804-4 or 806-4 as part of their course work. Other courses may be drawn from those normally offered at the graduate level by this or other related departments. Normally, a student must take at least 20 credits of regularly scheduled course work within this department; exceptions to this rule must be approved by the student's Supervisory Committee and the Graduate Studies Committee.

2. Successful performance in written comprehensive examinations.
   2.1. Students specializing in Economics must write comprehensive examinations in economic theory and one other field.

   In addition, students must complete a field either by successfully taking two courses (other than readings courses) or a comprehensive examination in the field. The economic theory comprehensive examinations will consist of separate
examinations in micro and macroeconomic theory and will usually encompass the topics and readings covered by ECON 802-3, 803-3, 805-4 and 806-4. Comprehensive examinations in other fields normally encompass the topics and readings presented in the main courses in those fields. The fields in which courses and/or comprehensive examinations are regularly given are economic theory, econometrics, finance, international economics, monetary economics, development economics, regional economics, resource economics and industrial organization. Courses and/or comprehensive examinations are given by arrangement in public economics, labor economics, economic history, methodology, as well as in the Business Administration fields of accounting, finance, management science, marketing and organization behavior. Preparation for other fields should be on the basis of directed study and special course work.

2.2. Students specializing in Economics and Business Administration must write a comprehensive examination in economic theory. The theory examination will cover the topics and guideline readings of either microeconomics (ECON 802-3 and 803-3), or macroeconomics (ECON 805-4 and 806-4). A student specializing in Economics and Business Administration will complete three fields, subject to the following requirements.

a) at least two fields will be satisfied by written examinations, and
b) at least two of the fields will be drawn from the following: 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 Studies Committee.

2.4. Comprehensive examinations will usually be taken after completion of appropriate course work and/or other preparation. One comprehensive exam in economic theory must be written within three academic semesters of the beginning of the PhD program, but a student may sit for an examination after the first semester following formal admission to the PhD program. This may be done whether or not specific courses recommended by the department as partial preparation for the examination have been taken.

3. An original and significant thesis completed by the candidate under supervision of faculty members of the department.
4. ECON 900 research workshop is a required course for all students who are on campus and registering in ECON 990 (thesis).

Dissertation Procedures
A Thesis Proposal Seminar should be given by each candidate at an early stage in his/her research program. Each candidate produces a written prospectus, makes it available to all interested members of the department and presents it on a pre-announced date in ECON 900. The candidate's Supervisory Committee should attend the presentation and they should arrange for other interested members of the department to attend as well. That committee, along with the candidate, should decide on the future course of research on the thesis, paying due regard to the comments that have been received.

A Thesis Core and a Thesis Seminar should be presented by each candidate after the Supervisory Committee has agreed that the thesis is substantially complete but before it has been formally approved as ready for a thesis 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 made available to all interested members of the department. The Graduate Studies Committee, in consultation with the candidate and the candidate's Supervisory Committee, designates two other members of the Department who may submit written comments on thesis, thesis core, and/or thesis seminar to the Supervisory Committee. The Supervisory Committee considers these comments, as well as those oral and written comments of the department members, in determining whether additional substantive work should be done on the thesis or whether the thesis may be submitted for final typing and approval and is ready for a Thesis Defence. In the latter case, that committee should submit a written report, along with the other written comments, to the Graduate Studies Committee. This should be completed at least two months before the proposed date for the thesis defence.

The Thesis Defence. Procedures for this defence are described in the Graduate General Regulations section.

Canadian Institute for Advanced Research
Telephone: 778.782.5036
R.G. Lipsey BA (Br Col), BA (Tor), PhD (LSE), Alcan Fellow

The University houses one centre of the Canadian Institutes for Advanced Research Program in Economic Growth and Policy. It examines long-term economic growth with special emphasis on the importance of ideas and innovations, and the implications for economic policy. It is influenced by the view that the prevailing neoclassical model is inadequate to deal both with the
consequences of accepting technological change as an endogenous economic activity, and with the radically altered character of the modern global economy, and is therefore not a fully adequate guide to the formulation of government and corporate policy.

The program has assembled an international network of researchers working, individually and collectively, to examine the dynamics of innovations, change, and the creation and distribution of income and wealth. By understanding these dynamics, it is hoped that effective economic policy can be formulated.

Graduate Courses

ECON 663-4 The Economics and Management of Aquaculture
Introduction to the economic theory and management techniques relating to Aquaculture. This course will not carry credit for the MA and PhD degrees in the Department of Economics.

ECON 798-4 Introduction to Mathematical Economics
Applications of static optimization techniques, matrix algebra, differential and difference equations in economic models.

ECON 799-4 Introduction to Microeconomic Theory
An introduction to the neoclassical theory of prices, resource allocation and distribution.

ECON 802-3 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 803-3 Microeconomic Theory II
The course subsequent to ECON 802-3 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 802-3 and 803-3 which covers such topics as equilibrium theory, axiomatic analysis, stability analysis, income distribution, dynamic micro models, and models of non-market economics. Prerequisites: ECON 802 and 803 or equivalent. Offered once a year.

ECON 805-4 Macroeconomic Theory
An examination of contemporary theories of aggregate economic behavior with emphasis on post-Keynesian developments. Prerequisite: ECON 331. Offered once a year.

ECON 806-4 Advanced Topics in Macroeconomic Theory
The course subsequent to ECON 805-4 which covers advanced macroeconomic theory topics including capital and growth theory. Prerequisite: ECON 805. Offered once a year.

ECON 807-4 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 808-4 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 809-4 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 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. Prerequisite: ECON 805. Offered once a year.

ECON 811-4 Advanced Monetary Theory
Selected topics in monetary theory and policy. Prerequisite: ECON 810.

ECON 812-4 Stabilization Policy
Critical examination of the nature and uses of monetary, fiscal, structural and debt management policy. Emphasis will be placed on careful specification of the kinds of actions involved, their theoretical bases, and their actual effects on the economy under given conditions. Examples will be drawn primarily from Canadian, American, and British experience. Prerequisite: ECON 805.

BUEC 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.

BUEC 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. Prerequisites: ECON 331, 835. Offered once a year.

BUEC 818-4 Advanced Topics in Business Finance
Extensions of advanced topics beyond those covered in BUEC 815 and 817. Prerequisites: BUEC 815, 817.

BUEC 819-4 Mathematical Programming for Economics and Commerce
Topics include dynamic programming, linear and non-linear programming, stochastic programming, optimization techniques, game theory. Prerequisite: permission of the instructor.

BUEC 820-4 Analysis of Dynamic Processes
Analysis of the operation of dynamic (time-varying) economic/business systems with emphasis on model formulation and optimization procedures. Offered once a year.

BUEC 823-4 Business and Economic Forecasting
Concepts of forecasting including trend fitting, time series, regression, econometric survey data, leading indicators. Application to business, economics, population, technology. Prerequisite: BUEC 333.

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 830-4 Mathematic Models for Economics
The mathematical formulation of basic economic concepts. Applications include the use of the calculus in demand and production theory, theory of the firm, and distribution theory. Also the application of difference equation techniques in economic growth and cycle models, and input-output and linear programming formulations of transportation and production models. Prerequisites: ECON 331, 802, 803 and 805.

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 Activity Analysis
The theory of activity analysis and its application to problems in production, consumption and exchange. Prerequisite: ECON 331.
ECON 835-4 Quantitative Methods
An examination of both descriptive and inductive analysis of business administration and economics problems. Particular attention will be paid to the theoretical basis of various models employed in the analysis of time series and cross-sectional data. Development and application of regression and correlation models, index numbers, and decision theory. Prerequisites: BUEC 333 and ECON 331. 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
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. Offered once a year.

ECON 838-4 Topics in Econometrics
The content of this course will depend on the interests of the students. Surveys of current literature and independent study will form the basis of the course. 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. Prerequisite: ECON 805. Offered once a year.

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. Prerequisites: ECON 443 and 446. Offered once a year.

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. Prerequisites: ECON 443 and 446.

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 805.

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. Prerequisite: ECON 855.

ECON 859-4 Population Economics

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 862-4 Forestry Economics
Economic analysis of forest exploitation. Alienation policies, structure of the forest industry, optimum harvesting criteria, taxation and public policy in the light of achieving efficiency in forest management.

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. Offered once a year.

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. Prerequisite: ECON 331 recommended.

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 331. Offered once a year.
ECON 86-4 Industrial Relations

ECON 88-4 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 89-4 Public Finance
The application of welfare criteria to the theoretical investigation of methods of expenditure determination and approaches to taxation. Consideration of the problems of efficiency, equity, and incidence. Prerequisites: ECON 802, 803 and 805.

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. Prerequisites: ECON 802, 803 and 805.

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. Prerequisite: ECON 805.

ECON 900-0 Economics Research Workshop
Methodological approaches to research: the selection, planning and conduct of research. The critical evaluation of research reports by students, staff, and invited speakers. Students writing theses and enrolled in ECON 991 or 990 normally are required to participate in this workshop. Grading will be on a satisfactory/unsatisfactory (S/U) basis. Offered each semester.

ECON 911-4 Selected Topics in Economics
Offered by arrangement.

ECON 912-4 Selected Topics in Economics
Offered by arrangement.

ECON 913-4 Selected Topics in Economics
Offered by arrangement.

ECON 921-4 Directed Readings
Supervised reading in a particular field of specialization. Offered by arrangement.

ECON 922-4 Directed Readings
Supervised reading in a particular field of specialization. Offered by arrangement.

ECON 923-4 Directed Readings
Supervised reading in a particular field of specialization. Offered by arrangement.
Department of English
Location: 6129 Academic Quadrangle
Telephone: 778.782.3136/4614
Chair: K. Mezei BA (York), MA (Car), PhD (Qu)
Graduate Program Chair: J. Sturrock BA, MA (Oxf), PhD (Br Col)

Faculty and Areas of Research
For a complete list of faculty, see English undergraduate section.

C.M. Banerjee - 18th century English literature, literary criticism
S.A. Black American literature, literature and psychoanalysis, Shakespearean and Greek tragedy
R.F. Blaser - Contemporary and 19th century American and English poetry, classical backgrounds
T. Bose - Renaissance drama and poetry, Shakespeare, Milton
G. Bowering - Canadian and American literature, contemporary/avant garde literature
P. Budra - Shakespeare, Renaissance literature, 17th century literature
P.M. Buitenhuis - American literature, Canadian literature, modern British fiction and poetry, Canadian studies
F.H. Candelaria - Writing, composition, theory, poetics
R.M. Coe - Rhetoric, composition theory, practice, and pedagogy, literary critical method, modern drama
J.R. Curtis - English romantic literature, textual criticism, children's literature
L.A. Davis - Romantic Literature
P. Delany - Medieval, 16th and 17th century English literature, literature and psychology, ancient literature, Bloomsbury group,
D.H. Lawrence, James Joyce, Marxist criticism
S. Delany - Chaucer, medieval comparative literature, middle English, Tudor literature, Marxist criticism, early literature, critical theory, gender in art
H. DeRoo - Old English, middle English, heroic literature, old Norse, studies in language
S. Djwa - Canadian literature, modern poetry
G.R. Elliott - Canadian literature and its historical background
J.E. Gallagher - Chaucer, medieval and old English literature and language, Tudor studies, history of the English language
C. Gerson - Canadian literature
M.A. Gillies - 19th and 20th century British literature
J. Giltrow - Discourse analysis, literacy and composition, children's literature, travel narrative
T. Grieve - Modern poetry, composition and rhetoric
E.F. Harden - Victorian literature, Romantic literature, early modern literature
M.D. Harris - Victorian novel, Romantic period, fantasy, science fiction, African fiction, psychological interpretation of literature
A. Hungerford - Composition, drama
A. Lebowitz - 19th century and modern British literature, feminist literary criticism, nature writing
R.N. Maud - Oral traditional literature, modern literature, Shakespeare
A. Messenger - 18th century English literature, Shakespeare, Canadian drama
K. Mezei - Canadian literature, Quebec literature and translation, modern British fiction, especially Virginia Woolf, feminist literary criticism
R.A. Miki - 19th century American literature, modern American poetry, contemporary Canadian poetry
J. Mills - Medieval and Tudor literature, modern novel, drama
M. Page - Contemporary drama, 20th century English literature, Commonwealth literature, Shakespeare
K.F. Paulson - North American immigrant literature, American literature, restoration and 18th century literature, drama
S. Roberts - Chaucer, renaissance literature, 17th century literature
A. Rudrum - 17th century religious verse and prose, Henry and Thomas Vaughan, Milton, theology and literature
P.M. St. Pierre - Commonwealth literature, Canadian literature
E.A. Schellenberg - Restoration, 18th century, romantics and Victorian literature, medieval literature
M. Steig - Victorian novel, literature and psychology, literary theory, literature and graphic art, children's literature
D. Stouck - American literature, Canadian literature
M.A. Stouck - Chaucer, middle English, old English, 15th century poetry
J. Sturrock - Romantic poetry, the English novel, women in Victorian literature
S. Wong - Renaissance, restoration literature
J. Zaslove - Comparative literature (English and European), literary theory, social history of art and literature, culture theory, aesthetics and politics

MA Program

**Admission**
In addition to the requirements listed in the Graduate General Regulations section, the department requires evidence of ability in academic writing, in the form of at least two substantial literary essays which are scholarly in format and approach. The papers submitted may be undergraduate essays previously prepared, or ones specially written for this purpose.

**Programs**
This program develops scholars with a critical and comprehensive awareness of English studies. While offering students the opportunity of specializing in one of the various areas of strength in the department, the program requires them to ground their interest in a wide and flexible understanding of literary history and the possibilities of study.

Admission into the program requires a good background in literatures in English. A student whose preparation shows deficiency will be required to make it up before admission.

The program may be completed in two ways: In option A students take four courses, write a thesis of about 100 pages and defend it in an oral examination, while in option B they take six courses and write a field examination in three of the six courses followed by an oral exam based on the written. Students in either option may have one course as an individually supervised study to pursue a special interest or satisfy a need.

Students may enrol for one or two courses per semester. It is expected that students also working as teaching assistants will complete the program in six semesters of study. For further details about departmental requirements consult the departmental handbook.

The department recognizes the special needs of persons already working who may wish to improve their qualifications. Some graduate courses will regularly be offered at night, and part-time students are permitted (though University regulations require that all MA students must complete their work within twelve semesters of full time equivalent enrollment or six calendar years, whichever is shorter).

**Interdisciplinary Studies**
In addition to the MA programs described here, the University offers degree programs to exceptionally able applicants whose proposed course of 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 section 1.3.4 under Graduate General Regulations.)

**Examinations**
While the general regulations set the minimum cumulative grade point average necessary for continuance at 3.0, the English Department regards any course grade below B to be unsatisfactory and expects its students to achieve an average above the minimum. Any student whose progress is deemed unsatisfactory may be asked to withdraw under section 8.3 of the Graduate General Regulations.

Students who choose the thesis option must submit a proposal and be examined on it by the Supervisory Committee no later than one semester following the completion of course work. Students may proceed with their thesis only after the approval of the Supervisory Committee and the Graduate Program Committee.

Students in the non-thesis option will be exempt from this procedure.
**Language Requirement**

All students registered in the MA program will be required to demonstrate a reading ability in one language other than English that is acceptable to the students' supervisory committee. Ability will be determined by a time-limited examination consisting of the translation of a passage of literature or criticism in the particular language. A dictionary will be permitted.

The Department of French and the Department of Spanish and Latin American Studies offer courses to help graduate students meet language requirements. Students interested in courses in German or Russian should consult with the Office of the Dean of Arts.

For further information and regulations, refer to the Graduate General Regulations section (1.).

**PhD Program**

The English Department has a small PhD program. Students interested in applying should have a well thought-out project that can be integrated into the department's areas of specialization. The department is open to cross-disciplinary proposals and innovative studies. Students are expected to contribute their input at all stages of the program.

The department has expertise in major areas of English literature and language with special strength in the twentieth century. The Bennett Library's Contemporary Literature Collection has the largest single collection of post-war experimental and avant-garde poetry in Canada. It also contains a substantial Wordsworth collection and William Blake drawings, illuminations and engravings in facsimile.

**Admission**

For admission to the doctoral program students are required to have an MA degree or equivalent with high standing from a recognized university. Students entering the program are expected to have a good background in English studies. To fill any gaps, students may be required to do make up courses at the undergraduate or graduate level.

To apply, students must submit transcripts, three letter of reference, two samples of academic writing, and a 1-2 page description of their doctoral project. This program has been approved for part-time status.

**Application Deadline**
February 1

**Residence Requirement**
Six semesters

**Program Requirements**

The first two years of the program are designed to provide a necessary grounding for students before they pursue their particular thesis project; in the third year, students will engage in the research and writing of their dissertation. Upon admission, the student will be assigned ad advisor until a supervisor and supervisory committee are selected.

The doctoral program has three stages.

**Courses**

Students shall complete four courses by the end of the third semester: three courses of their choice plus ENGL 810/811 Graduate Professional Development Seminar, a required graduate course. The senior supervisor in consultation with the Graduate Program Committee will advise students in their choice of courses.

**Field Exams and Thesis Oral**

Students must write their field exams by the end of the sixth semester, and complete their thesis oral by the end of the seventh semester.

**The Thesis**

Students complete their research and proceed with the writing of their thesis. Students have 9-12 semesters to complete their degree.
Individualized Field Exams
Each candidate will write two field exams. The student may choose either to a) sit a four hour exam (closed book), or b) take home the examination question and complete it within 7 days. The submitted examination paper should be no more than 30 pages. There will be no oral defence.

In each field exam area, a partial reading list will be prepared by the faculty specializing in the area. Students are expected to add to the reading list. The completed reading list must be approved by two of the faculty in the area and the Graduate Program Committee. Current field reading lists may be obtained from the department.

Both field exams are to be completed by July 30 of the second year in the program (sixth semester). The examiners will consist of two faculty in the area appointed by the Graduate Program Committee. The senior supervisor will not be an examiner in the field exam. Students will be awarded pass/fail or pass with distinction for truly exceptional exams.

A student who fails a field exam may be allowed to repeat it once not later than the following semester. A second failure will lead to elimination from the program.

Thesis Oral
The purpose of the thesis oral is to ensure coverage in the thesis area. Upon successful completion of field exams, the student will submit a reading list by September 15 on the background readings for the thesis area to the Senior Supervisor. The Supervisory committee for the thesis oral will consist of the Senior Supervisor and one of the other supervisors. The committee must respond to the proposed reading list by October 1. The final reading list must be approved by the Graduate Program Committee.

The oral examination on the thesis area and background material will take place by December 15. The oral exam will be approximately two hours in length.

The oral will be graded pass/fail. In exceptional cases a distinction will be recognized.

Language Requirement
All students registered in the PhD program will be required to demonstrate a reading ability in one language other than English that is acceptable to the students' Supervisory Committee. Ability will be determined by a time-limited examination consisting of the translation of a passage of literature or criticism in the particular language. A dictionary will be permitted.

The Department of French and the Department of Spanish and Latin American Studies offer courses to help graduate students meet language requirements. Students interested in courses in German or Russian should consult with the Office of the Dean of Arts.

For further information and regulations, refer to the Graduate General Regulations section (1.)

Thesis
In consultation with the Graduate Program Committee, the student will create a supervisory committee consisting of a senior supervisor and two readers (one of whom may be from another department). By his/her third semester, the student must submit the proposed supervisory committee and a thesis proposal to the Graduate Program Committee for approval.

The completed thesis will be defended in an oral examination. The final (defence) examining committee shall consist of a chair (normally the Graduate Program Chair), the members of the Supervisory Committee (Senior Supervisor and at least two other members of the department), a University faculty member external to the English Department, and an external examiner (not a member of Simon Fraser University).

From the time of the appointment of the Supervisory Committee, the student and his or her Senior Supervisor should meet regularly (at least three times a semester) through the field exam period, the semester of the thesis oral, and the period of thesis research and writing.

It is the student's responsibility to take the initiative in setting up a schedule of meetings. If the Senior Supervisor is to be away from campus for more than a month, she/he should inform the Graduate Program Committee and arrange for another member of
the Supervisory Committee to meet regularly with the student. All students engaged in research (ENGL 899) should give the Supervisor a written report on their research at the end of every semester. This is particularly important for students who are not in the process of submitting chapters of their work. Any changes in direction or new developments should be discussed.

Students may make changes to their Supervisory Committee in cases where, for instance, the development of a more refined topic indicates a different faculty member would be more appropriate for the committee. Changes made for any reason must be formally approved by the Graduate Program Committee and the Dean of Graduate Studies.

**Graduate Courses**

ENGL 801-5 The Theory of Literary Criticism
Explores some of the basic theoretical problems involved in the reading and interpretation of literature. May treat, among others, epistemological, intertextual, social, historical, semiotic, gender, and psychological issues.

ENGL 802-5 Theories of Language and Writing
The study of the discursive and/or non-discursive (poetic) uses of language. May include theories and practice of rhetoric and composition.

ENGL 803-5 Literary Movements and Historical Periods
Medievalism, the Renaissance, metaphysical poetry, Neo-classicism, Romanticism, transcendentalism, pre-Raphaelitism, modernism and post-modernism are examples of possible topics.

ENGL 804-5 Studies in Canadian Literature
In addition to particular movements and periods in literatures in Canada, may explore relations between Canadian, Quebec, American, British, or Commonwealth literatures.

ENGL 805-5 The Study of Genre
History and theory of the novel, epic, lyric, poetry, comedy, tragedy, satire, the grotesque and autobiography are among the possible areas of study.

ENGL 806-5 Approaches to Individual Authors
May deal with one or more authors from a particular theoretical perspective.

Each of these courses will bring a broadly defined concept or approach to bear on a limited number of texts.

These courses will be offered in a cycle, two each in Fall and Spring and one in Summer.

ENGL 810-5 Graduate Professional Development Seminar Part I
The Graduate Professional Development Seminar (ENGL 810/811) is required of both MA and PhD students. All incoming students will take 810 in their first year. ENGL 810 has two components. The first component is to introduce students to the basic tools of advanced study and to acquaint them with the kinds of research being done in the department of faculty and graduating students. There will also be workshops on topics such as drafting and submitting proposals, applying for grants, presenting papers, publishing, choosing graduate schools, and employment possibilities, including interview situations. The second component consists of six 2 hour workshops for new teaching assistants which will focus on the teaching of writing in literature courses. Required. Satisfactory/Unsatisfactory

ENGL 811-5 Graduate Professional Development Seminar Part II
Conclusion of 810 consisting of research workshops for students near completion of their research projects. Required. Satisfactory/Unsatisfactory.
ENGL 841-5 Directed Readings A
ENGL 842-5 Directed Readings B
ENGL 843-5 Directed Readings C
ENGL 898 MA Thesis
ENGL 899 PhD Thesis
ENGL 999 MA Field Exam

**Department of French**

Location: 8108 Classroom Complex  
Telephone: 778.782.4740  
Chair: J. Viswanathan LesL, MA (Ill), DesL (Liege)  
Graduate Program Chair: M.C. Fauquenoy LesL, Dr 3rd Cy (Paris)

*Faculty and Areas of Research*

For a complete list of faculty, see French undergraduate section

B.E. Bartlett - French linguistics, history of linguistics, linguistic theory  
C.P. Bouton* - French linguistics, language development and acquisition, history of neurolinguistics  
R. Davison - 18th century French literature, correspondence and pedagogy, 19th century French literature, women's literature  
M.C. Fauquenoy - French linguistics, sociolinguistics, Creole French dialects  
G. Merler - Modern French and Quebec literature, methods of discourse analysis, Stendhal  
C. Nivet - French linguistics, syntax, sociolinguistics  
G. Poirier - Renaissance French literature, 17th century French literature, Quebec literature and paraliterature, gender studies  
S. Steele - Medieval French literature, new medievalism, literary theory  
J. Viswanathan - Modern French and French Canadian novel, narrative theory, film and fiction  
P. Wrenn - Text linguistics, experimental phonetics, Canadian French, phonostylistics, phonology

*emeritus

The Department of French offers opportunities for graduate research leading to the MA degree, with a concentration in either French Linguistics or French Literature. Students interested in French as a Second Language (FSL) should contact the Graduate Program Chair. (The FSL option will be of particular interest to candidates contemplating a career in the teaching of French.)

Students seeking admission to a PhD program may apply under the Special Arrangements provisions of the Graduate General Regulations (section 1.3.4).

The major areas of study are as follows.

**Linguistics:** Linguistic analysis of French, 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, etc.

**Literature:** The literature option offers a unique curriculum based on theoretical and interdisciplinary approaches to literature and para-literature: i.e. textual, discourse, genre analysis; cultural and gender studies; theory of literary criticism; psychological, sociological criticism, new trends in the history of movements and historical periods, topics in French Canadian literature.
MA Program

Conditions of Admission
Candidates for admission must satisfy the general admission requirements for graduate studies (see sections 1.3.2 and 1.3.8 of the Graduate General Regulations).

Admission into the program requires a good background in French Literature or in French Linguistics, as well as a good command of both oral and written French. Candidates who do not meet those conditions will be required to remedy the deficiency before admission into the graduate program can be granted. This may be accomplished through one or two semesters as a Qualifying Student (see section 1.3.5 of the Graduate General Regulations).

Upon acceptance in the program, each student will be assigned a temporary supervisor.

The program offers the possibility of completing the degree requirements "with thesis" or "without thesis." In either case, the student will work under the direction of a supervisory committee (see section 1.6 of the Graduate General Regulations), to be appointed by the end of the second semester. The student's program of course work, as well as thesis topic or area of field examination, must be approved by the supervisory committee.

Degree Requirements
The MA program has the following minimum requirements. During the first semester, students must successfully complete:

one of
FREN 800-2 Readings in French Linguistics
FREN 801-2 Readings in Literary Theory

plus, during the first or second semester, students must successfully complete: FREN 802-2 Basic Research Methods

Concentration Requirements
Students must successfully complete an additional 20 semester hours, selected from core and specialized courses for each concentration (either Linguistics or Literature).

Core Courses
The following courses treat fundamental aspects (in literature and linguistics) of the student's chosen field of specialization. These courses are all offered at least once every six semesters. Selection of and need to take any specific course or courses is decided in consultation with the student's supervisor.

Linguistics
FREN 807-5 Problems in French Phonology
FREN 808-5 Problems in French Grammar
FREN 809-5 Problems in French Semantics and Lexicology

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

Specialized courses
The courses listed below treat specialized areas with respect to the student's particular interests or thesis topic.

These specialized courses are offered as needed to complete or to enhance a student's program of coursework. Depending upon content and enrollment, they may be offered as directed readings courses or as seminars rather than lecture courses.

Linguistics/Applied Linguistics
FREN 811-5 Problems in French Dialectology
FREN 812-5 Problems in French Linguistic Theory
FREN 813-5 Problems in the History of French
FREN 814-5 Contrastive Structures of French and English
FREN 815-5 French Creoles
FREN 816-5 Sociolinguistic Approaches to French Studies
FREN 817-5 French Applied Linguistics
FREN 818-5 Phonostylistics of French
FREN 830-5 Canadian French
FREN 831-5 Studies of Bilingualism in the French-Speaking World
FREN 832-5 Theoretical Approaches to the Acquisition of French as a Second Language

Literature
Topics in the following literature courses will vary to meet the interests of both students and faculty.

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

Note: Upon the approval of the supervisory committee, one course from the other concentration may be substituted, or one course may be taken outside the department. For a concentration in linguistics, students able to demonstrate adequate preparation in general linguistics may consider taking a course in the Linguistics Department. For a concentration in literature, students may consider taking a course in the English Department. For a concentration in French as a Second Language (FSL), course selection will be subject to the approval of the Graduate Program Committee.

Thesis Option
Students must choose one of the following options.

MA with Thesis
For this option, students must complete a thesis of about 100 pages on a topic acceptable to the supervisory committee, defended at an oral examination as described in section 1.9 and 1.10 of the Graduate General Regulations.

MA without Thesis
This option requires successful completion of a further 10 semester hours of graduate coursework within the Department of French and a written field examination based on three completed courses. These additional courses may be selected from either concentration. Preparation for the field examination will be undertaken on the advice of the supervisory committee.

Language Requirement
All students must demonstrate a level of competence in written and oral French acceptable to the Graduate Program Committee. They are also expected to show at least a reading knowledge of one language other than English or French that is acceptable to the student's supervisory committee. This requirement can be fulfilled either by having successfully completed two courses in that language or by passing a special examination consisting of the translation of a 250 word text into English.

Graduate Courses

FREN 800-2 Readings in French Linguistics
A semester of required readings in French linguistic theory. This course, which culminates in an oral examination, will be graded satisfactory/unsatisfactory.

FREN 801-2 Readings in French Literature
A semester of required readings in French literary theory. This course, which culminates in an oral examination, will be graded satisfactory/unsatisfactory.

FREN 802-2 Basic Research Methods
The study of research methods and tools used in French linguistics or French literature. Planning a long term research project.
FREN 807-5 Problems in French Phonology
Explores a selection of classic problems of French phonology from different theoretical viewpoints.

FREN 808-5 Problems in French Grammar
Explores a selection of classic problems of French morphology, morpho-syntax and/or syntax from different theoretical viewpoints.

FREN 809-5 Problems in French Semantics and Lexicology
Theories, methods and major research trends in the diachronic and/or synchronic analysis of the lexicon and structures of meaning in French.

FREN 811-5 Problems in French Dialectology
Methods in the study of social and geographical dialects (from fieldwork techniques to the analysis of data). Linguistic theory (traditional, structural, generative and sociolinguistic) as it applies to French dialectology.

FREN 812-5 Problems in French Linguistic Theory
Studies the contributions of a selection of twentieth century French language linguists to the evolution of various aspects of linguistics and linguistic theory.

FREN 813-5 Problems in the History of French
A diachronic study of a variety of phonological, grammatical or lexical aspects of French presenting descriptive/explanatory challenges.

FREN 814-5 Contrastive Structures of French and English
A contrastive study of the grammatical structures of French and English with emphasis on 'rank-shift' across discourse techniques. A variety of practical applications may be envisaged: pedagogy, translation, stylistic analysis, etc.

FREN 815-5 French Creoles
Development, diversity and sociality of French Creoles. Theoretical approaches to the study of the life cycle of creole languages, with special emphasis on French-based Creoles.

FREN 816-5 Sociolinguistic Approaches to French Studies
Language, society and identity in France. Study of social markers in speech, conversational rules, objective versus subjective norms, attitudes towards language variation and their implications among French speakers from an integrative perspective.

FREN 817-5 French Applied Linguistics
Study of the contribution of linguistic theory to the teaching and learning of French as a second language.

FREN 818-5 Phonostylistics of French
The linguistic analysis of paralinguistic features of French and their expressivity in various types of oral discourse.

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 830-5 Canadian French
Advanced study of the linguistic structures and sociolinguistic rules of French in Canada.

FREN 831-5 Studies of Bilingualism in the French-Speaking World
Theories of bilingualism as they apply to French, and the place of French in the world.

FREN 832-5 Theoretical Approaches to the Acquisition of French as a Second Language
New trends and theoretical developments in the acquisition of French as a second language.

FREN 898 MA Thesis

FREN 999 Field Examination

Department of Geography
Location: 7123 Classroom Complex
Telephone: 778.782.3321
Chair: J.T. Pierce BA (Tor), MA (Wat), PhD (Lond)
Graduate Program Chair: (to be announced)

Faculty and Areas of Research
For a complete list of faculty, see Geography undergraduate section.

W.G. Bailey - Physical climatology, ginseng research
N.K. Blomley - Political and urban geography
J.A.C. Brohman - Third world development, economic geography, Latin America
R.C. Brown - Fisheries geography, resources development
L.J. Evenden - Urban geography, local government
E.M. Gibson - Human geography of modern and post modern societies, landscape style, Canada
A.M. Gill - Tourism and community planning, resources management
W.G. Gill - Urban and social geography
M.V. Hayes - Medical geography, population health
R. Hayter - Regional development, manufacturing
E.J. Hickin - Geomorphology
R.B. Horsfall - Social geography, environmental psychology
I. Hutchinson - Biogeography
P.M. Koroscil - Historical geography, Canada
L.F.W. Lesack - Ecosystem biogeochemistry, land and water interactions, limnology
R.D. Moore - Forest hydrology, snow hydrology, modelling
C. Nesmith - Gender and environment, feminist geography, development, Asia
J.T. Pierce - Economic and rural geography, research methodology
B. Pitman - Cultural and social geography, urban studies, regional development and planning
T.K. Poiker - Economic, quantitative, computer cartography
A.C.B. Roberts - Cultural, historical, paleoenvironments, remote sensing, photogrammetry
M.C. Roberts - Fluvial geomorphology, field methods
M.G. Schmidt - Soil science, forestry, geographic information systems
S.T. Wong - Resources management, quantitative methods
Areas of Research
The department takes a special interest in the development and evaluation of theoretical frameworks in the systematic aspects of Geography; emphasis is placed on the application of these to contemporary and historical geographical problems in western North America, with particular reference to British Columbia and the utilization of its resources.

MA Program

Admission
For admission requirements refer to the Graduate General Regulations.

Admission for MA/MSc students will be in the Fall semester only, and for PhD students in either the Fall or Spring semesters. Applications for Fall admission should be completed by February 1st of that year, and applications for Spring admission by September 15th of the previous year. The committee will announce its decisions to applicants in the first week of May.

The MA candidate, on being admitted to the department, will work under the guidance of a faculty advisor, pending the choice of a Supervisory Committee. The Supervisory Committee, normally consisting of three faculty members, one of whom may be from outside the department, will be chosen by the second semester.

Degree Requirements
The MA program allows two options, namely the thesis option and the extended essay option. The former requires the submission of a high quality piece of research which will ordinarily involve the conceptualization of a problem and the collection, analysis and interpretation of empirical data. It is possible, however, for non-empirical research to be undertaken. In the extended essay option students are required to submit two essays which are original in the sense that they make some distinctive contribution to the research literature. Extended essays ordinarily involve a critical review or synthesis of literature, concepts and/or techniques or the development of hypotheses, possibly to include pilot work. Neither the thesis nor the extended essays should be a modification of a paper completed for course work.

For the MA degree the minimum course requirements are 12 credit hours (three one-semester courses) or 20 credit hours for the extended essay option and GEOG 700 and 701. Grading for GEOG 700 and 701 will be on a satisfactory/unsatisfactory basis and constitutes a (minimum) requirement in geographic methodology. GEOG 700 and 701 must be taken by students at the first available opportunity. As part of their 12/20 credit hours students are required to take either GEOG 704, Survey Methods and Analytical Techniques in Human Geography, or 706, Quantitative Methods in Physical Geography. In certain circumstances, on the advice of the student's advisor, the student can request this requirement be replaced by another course.

Students are expected to complete their minimum course requirements within the Geography Department and permission must be obtained from the graduate studies committee to complete a minimum course requirement outside of the department. Any students with deficiencies may be asked to complete more courses, including courses at the undergraduate level and in other departments. Also, at the discretion of the Supervisory Committee, students may be directed to acquire knowledge of a language relevant to their studies.

Students are required to submit a written thesis prospectus to their Supervisory Committee by the end of the third week of the semester following completion of GEOG 700 and 701; the Supervisory Committee must approve the proposal prior to the start of substantive research. In addition, the candidate is required to present the research proposal to the department at a colloquium prior to the end of the third semester of residence (or by the end of the semester following completion of GEOG 700 and 701).

Master of Science Program
The department offers a program leading to the MSc degree in the Faculty of Science. For details, see the Geography entry in the Faculty of Science section.

PhD Program
For admission requirements, refer to the Graduate General Regulations.

All applicants are expected to have completed the requirements of the MA or MSc program at Simon Fraser University or their equivalent. Students admitted to the PhD program without this background may be required to make up specified courses.
Supervisory Committee
The PhD candidate, on being admitted to the department, will work under the guidance of a faculty advisor, pending the choice of a Supervisory Committee. By the beginning of the second semester of residence students are required to choose a faculty member in the Geography Department as the Senior Supervisor of their Supervisory Committee and two or more additional committee members, one of whom may be drawn from outside the department.

Degree Requirements
The advisor, and subsequently the Supervisory Committee, and the student shall determine a program of study designed to suit the background and research objectives of each candidate. No formal course work is required of students. After consultation with the Supervisory Committee, however, students can elect to take courses in order to acquire knowledge and skills, including language skills, relevant to their research.

Comprehensive Examination
Written and oral qualifying examinations designed to establish the student's competence to proceed with doctoral thesis research will normally be undertaken at the end of the second semester of residence and no later than the end of the third semester of residence. Students who fail the written or oral examination may retake each, once, after a one semester lapse.

Both parts of the qualifying examination must be successfully completed by the end of the fourth semester of residence.

The Qualifying Examination Committee will consist of at least three faculty members from the department, (including the Senior Supervisor who will be the Committee Chair), plus one faculty member from outside the department.

The written examinations will comprise four papers jointly agreed upon by the members of the Qualifying Examination Committee. If the Supervisory Committee deems it appropriate a field problem may be chosen which substitutes for one of the four written papers.

The oral will be held by the Qualifying Examination Committee within three weeks following completion of all written examinations. The student will be examined primarily in the areas of the topics covered by the written examinations, but questions may range over the entire discipline.

Thesis
Candidates successfully completing qualifying examinations will be required to present a seminar to the department on their research interests. The seminar will be presented before interested faculty and students prior to the presentation of a thesis proposal.

The candidate will prepare a thesis proposal which will be circulated to faculty and resident graduate students. The candidate will present this proposal at a departmental colloquium no later than the end of the fifth semester of residence. In addition, and prior to completion of the thesis, the candidate will be expected to present before interested faculty and students, a report on the progress of his/her research. The timing of this report will be selected in consultation with the candidate's Supervisory Committee.

The completed thesis will be judged by the candidate's Examining Committee at an oral defence. If the thesis defence is failed, the candidate is ineligible for further candidacy in the degree program.

For further information and regulations, refer to the Graduate General Regulations.

Graduate Courses
GEOG 700-0 Introduction to Graduate Studies: Part I
A required course designed to acquaint new graduate students with the research strengths of the Department, research facilities in the University and its vicinity and with the methodologies of the main fields of geography. In addition, problems of both a philosophical and practical nature involved in the design and operationalization of geographic research will be examined.

GEOG 701-0 Introduction to Graduate Studies: Part II
Completion of GEOG 700-0. Grading of GEOG 700 and 701 will be on a satisfactory/unsatisfactory (S/U) basis.
GEOG 704-4 Analytical Techniques for Human Geographers
An examination of qualitative and quantitative techniques and associated software relevant to compilation of information for human geographic research.

GEOG 706-4 Quantitative Techniques in Physical Geography
An introduction to quantitative methods, statistical and physical modelling, sensitivity and error analysis, research design and data collection, editing and analysis in physical geography. GEOG 700-0, 704-4 and 706-4 are regularly scheduled in the Fall semester and GEOG 701-0 is regularly scheduled in the Spring semester. Courses 708-4 to 781-4 are scheduled more intermittently dependent, in part, on demand.

GEOG 708-4 Geographic Ideas and Methodology
This is an advanced course that critically examines the contemporary and historical modes of analysis in geography.

GEOG 710-4 Geography and Ideology
An attempt to define the concept "ideology", to recognize its operation in geography and to demonstrate its relevance in historical geography, political geography, and in the study of the symbolic structuring of cultural landscapes.

GEOG 712-4 Observation and Inference
A critical and pragmatic study of the process of observation in relation to inference. Some theoretical discussion, presentation of concrete exemplary cases; and practical exercises in the field will enlist specialists in various geographical sub disciplines (e.g., in urban morphology, vegetation, ethnic settlement, stream dynamics).

GEOG 714-4 Computer Cartography
Theoretical, algorithmic and practical components in the application of the computer for mapping.

GEOG 715-4 Geographic Information Systems
Data bases, systems concepts, quantitative techniques, modelling and display in geography, on the basis of computer systems.

GEOG 716-4 Aerial Reconnaissance for Remote Sensing
Theoretical and practical training in the acquisition of airborne multispectral remote sensing data.

GEOG 717-4 Digital Processing of Remote Sensing Data
Theory and applications of analytical processing procedures used with multispectral remote sensing data.

GEOG 720-4 Ecological Biogeography
Population, community and ecosystem ecology from a biogeographic perspective; island biogeography theory.

GEOG 721-4 Biogeography of Wetlands
Population biology, community organization, and environmental characteristics of wetland ecosystems with particular reference to Canadian examples.

GEOG 723-4 Climatology
Recent theoretical developments in climatology.

GEOG 724-4 Measurement and Modelling of Heat and Mass Transfer
An introduction to field measurement methods and mathematical modelling approaches used in heat and mass transfer research.

GEOG 726-4 Fluvial Geomorphology
Advanced theory and field measurement in open-channel fluid mechanics and fluvial geomorphology.

GEOG 727-4 Field and Analytical Techniques in Geomorphology
Theory and practice of selected field techniques.

GEOG 728-4 Quaternary Geology and Geomorphology
Stratigraphy of the Quaternary period; models of glacial sedimentation. Field study of glacial deposits.
GEOG 730-4 Fossil Landforms
Interpretation of fossil landforms in terms of their Periglacial origin.

GEOG 734-4 Resources Management
A study of the historical, cultural, economic, social and behavioral aspects of conservation and resource management from an interdisciplinary point of view.

GEOG 736-4 Resources and Environmental Issues in the Growth of Food Production
Concerned with identifying and analyzing constraints to expanding food production within a geographical context.

GEOG 738-4 Water Resources I
An examination of various models and methods of water resources development based on case studies from both developed and developing countries.

GEOG 740-4 Geography and the Third World
An examination of the objective geographical conditions in the Third World today and a review of the wide range of theories and suggested solutions of a geographical nature.

GEOG 742-4 Regional Development
Regional development in theory and practice with particular reference to resource based hinterland regions.

GEOG 745-4 Multinational Corporations and Regional Development
An examination of the influence of the policies and structures of multinational corporations on regional economic change.

GEOG 747-4 Transportation
A critical review and analysis of current research.

GEOG 749-4 Geography of Education
Education as a cultural, social and economic phenomenon within a spatial context. Regional educational planning.

GEOG 752-4 Cultural Geography
Seminar discussion of selected topics in recent cultural geography, with emphasis on relationships with social theory, current philosophy and research findings in related fields.

GEOG 754-4 Landscape Aesthetics
An advanced course on the cultural landscape that critically examines both theories influencing the style of western landscapes and the uses of landscape imagery in western arts.

GEOG 756-4 Historical Geography
An examination of the role historical geography plays within the discipline of geography. The course will evaluate the evolution and practical applied aspects of the subject.

GEOG 758-4 Heritage Resource Management
Survey of historical and prehistorical resource management with emphasis upon Canadian resources.

GEOG 760-4 Morphogenesis and the Built Environment
This course examines the evolution of built environments in urban contexts. It relates the impetus for morphological change to broad societal processes. Problems of evidence and method are discussed.

GEOG 761-4 Chronogeography
This course examines two approaches to the problem of space-time in human geography. In one the emphasis is on activity systems in time and space, in the conduct of "practical life", while in the other the emphasis is placed on geographical expressions of the life cycle.
GEOG 770-4 Geography, Development Theory, and Latin America
An analysis of geographic aspects of theories of development as they have been applied in Latin America.

GEOG 780-4 Environmental Cognition
Examination of current issues in the study of human understanding and relationships within the (mostly built) environments.

GEOG 781-4 Tactual Mapping: Theory and Practise
An exploration of design principles, production methods, and user training procedures appropriate to thematic and mobility maps for the visually handicapped.

GEOG 791-4 Directed Readings

GEOG 795-4 Selected Topics in Geography
Specialised graduate course on faculty research-related topics.

GEOG 797 MSc Thesis
GEOG 798 MA Thesis
GEOG 799 PhD Thesis

Department of History
Location: 6022 Academic Quadrangle
Telephone: 778.782.4467
Chair: R.E. Boyer BA (Westmount), MA (Wash), PhD (Conn)
Graduate Program Chair: J.I. Little BA (Bishop's), MA (New Br), PhD (Ott)

Faculty and Areas of Research
For a complete list of faculty, see History undergraduate section.

A.D. Aberbach - United States
L. Armstrong - Italian Renaissance
R.E. Boyer - Latin America
W.L. Cleveland - Middle East
D.L. Cole - Canada
J.S. Craig - 16th and 17th century British
C.R. Day - Social/France
R.K. Debo - Russia
P.E. Dutton - Ancient and Medieval
C.I. Dyck - Modern Britain
M.D. Fellman - United States
H. Gay - Science, Victorian intellectual
J.F. Hutchinson - Social, Russia
E.R. Ingram - Diplomatic, British India
H.J.M. Johnston - Canada
J.M. Kitchen - Germany, Socialism
R.L. Koepke - rance
M. Leier - Canada, labor
J.I. Little - Canada, French Canada
T.M. Loo - Canada, law
D. MacLean - Middle East, Islam, India
R.C. Newton - Latin America
H. Pabel - Early modern Europe
J. Parr - Canada
D. Ross - Africa
A. Seager - Canada, labor
J.P. Spagnolo - Middle East, imperialism
Areas of Study
The Department of History offers opportunities for graduate research leading to the MA and PhD degrees. The major areas of study are Canada, Colonialism and Imperialism, the Americas, Africa, Middle East, and Europe. Only those students 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 for admission to the respective graduate programs. 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 student's stated research priority.

Admission of Graduate Students
Admission for MA students will be in the Fall semester only, and for PhD students in either the Fall or Spring semesters. Applications for Fall admission should be completed by March 1 of that year, and applications for Spring admission by October 15 of the previous year. Applicants must submit a sample of their written work.

MA Program
Conditions of Admission
Candidates for the MA degree must satisfy the minimum entrance requirements set by the University: namely, at least a 3.0 average or its equivalent. In addition, the department requires a 3.33 (B+) average in History courses taken during the last two years of the undergraduate program. A degree in a discipline related to History may be accepted in some cases.

Programs of Study
Upon admission into the Graduate program, each student will be assigned a supervisor. For information about the supervisory committee see the Graduate General Regulations section. All candidates for the MA degree must satisfy the following minimum requirements, totalling 30 semester hours:

- The Department of History offers a thesis option and a project option. For students choosing the thesis option, 20 semester hours of course work of which at least 15 semester hours must be in graduate courses in the department. Students choosing the project option will take 30 hours of course work, of which 20 semester hours must be in graduate courses in the department, and present a research project. Each Fall and Spring semester at least two seminars (five semester hours each) will be offered, one in Canadian History, the other in European History. Fall and/or Spring seminars may also be offered in another field when student numbers warrant. All Canadianist students will be required to take HIST 805 and 806; all Europeanists must take HIST 810 and 811; and all others must take HIST 812 or one of the Canadian or European seminars. All first year students will also take the research seminar, HIST 814, which will focus on methodology and be offered during the Spring semester. At the end of this course each thesis option student will be required to present a paper which will become the basis of his/her thesis prospectus. Each project option student will be required to present a short research paper which will be the basis of the required research project. With the exception of HIST 800-5, the remaining courses required to complete the degree will be offered as individual study courses (five semester hours each). Students with significant financial support from fellowships, scholarships or teaching assistantships will be expected to take a full course load each semester. Those who receive no financial aid from fellowships, teaching assistantships, etc. may be considered part time students and may take only one course per semester.

- A thesis of 10 semester hours normally with a maximum length of 100 pages, or a research project normally with a maximum length of 35 pages. The student's thesis/research project must demonstrate capability in scholarly research and procedures as well as independent critical thought. Before the beginning of the third semester, the thesis-option student must defend his/her thesis prospectus, and the project option student must defend his/her research project, before an examining committee made up of the Supervisory Committee and the Chair of the Graduate Program Committee. The thesis prospectus should present a coherent thesis topic and place such a topic within the framework of existing work in the area.

Language Requirements
Students will be required to 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 an ability to read French. Ability will be
determined by a time limited examination consisting of the translation of a passage of history in the particular language. A dictionary will be permitted. The Department of French offers courses to help graduate students meet the language requirements.

PhD Program

General
Prospective candidates for the PhD degree should be 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 his/her ability to think critically; and for his/her power to analyse and coordinate problems and data from allied fields of study.

A student ordinarily will be admitted to the PhD program after completion of an MA or its equivalent. Applicants with a BA applying directly to the PhD program must have at least a 3.5 GPA or its equivalent. Candidates for the MA degree at Simon Fraser University, may, under exceptional circumstances, be admitted into the PhD program without completing the requirements for an MA, if they have completed 20 hours of course work. Admission from the MA program will be contingent upon a distinguished level of performance, recommendation of directing faculty, scholarly potential, and the available resources of the department.

Programs of Study
Upon admission into the graduate program in History, each student will be assigned a faculty supervisor. For information on Supervisory Committees see Graduate General Regulations. The Supervisory Committee and the student shall determine three fields of study, at least two of which will be chosen from the list printed 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 upon a general list of readings of approximately 45 books (or the equivalent) in each field. Copies of these reading lists must be submitted to the Chair of the Graduate Program Committee by the beginning of the second semester. The Graduate Program Committee will approve these lists and place 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 will be based on the reading lists. Comprehensive examinations will be offered twice a year, in the first half of the Fall and Spring semesters. Written examinations will be administered in weeks five and six of the semester; oral examinations will be scheduled in weeks six through seven of the same semester. Students who miss the first round in their fourth semester due to extenuating circumstances, must take the examinations the following semester.

For details on the nature of the comprehensive examinations, see the History Department's graduate brochure. All written examinations must be passed before the oral comprehensive takes place. A student who fails one of the written examinations, and one only, will have one additional chance for re-examination before sitting the oral examination. A "fail," "pass," or "pass with distinction" will be assigned by the examining committee as a whole after the completion of the oral examination. A student who fails at this stage will not be allowed to continue in the program.

PhD Fields
Canadian social and cultural history
Canadian political and economic history
Gender and history
Rural history
Medieval Europe
France since 1789
Germany since the 18th century
Russia since Peter the Great
The British Isles since 1485
European international relations since the early 19th century
European social history
European cultural history
European intellectual history
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 semester of the successful completion of the comprehensive examinations, and formal admission to candidacy, the student will submit a thesis prospectus on a topic selected from among the areas of specialization listed above. The same procedure will be followed as for MA candidates, but the thesis committee may seek the participation of another individual who has particular expertise in the area of the proposed thesis topic. Through his/her thesis the student must demonstrate his/her ability to make an original contribution to knowledge. When the student has completed the thesis and is ready to offer himself/herself for the degree, a Thesis Examining Committee will be formed, composed of the Chair of the Departmental Graduate Program Committee or his/her designate; 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 Supervisory Committee; and an External Examiner who shall not be an employee of the University. This committee will examine the student on the subject of the thesis and in the student's major field of study. The approved thesis will be forwarded to the National Archives for microfilming, following which, one copy of the thesis will be bound and deposited in the University Library.

For further information and regulations refer to Graduate General Regulations.

Language Requirements
Students will be required to 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 an ability to read French. Ability will be determined by a time limited examination consisting of the translation of a passage of history in the particular language. A dictionary will be permitted.

The Department of French offers courses to help graduate students meet the language requirements.

Graduate Courses
The following courses will be offered as seminars only. HIST 812 and 813 will deal with either the United States, Africa, the Middle East or Latin America.

HIST 800-5 Historiography
HIST 805-5 Western Canada
HIST 806-5 Themes in Canadian History
HIST 810-5 Themes in European History: Part I
HIST 811-5 Themes in European History: Part II
HIST 812-5 Selected Topics: Part I
HIST 813-5 Selected Topics: Part II
HIST 814-5 Research Seminar
Directed readings will be offered under the following headings.
HIST 819-5 Medieval Europe
This course will survey the range of historical literature produced between the end of antiquity and the beginning of the modern era. Beginning with the antique and patristic roots of medieval historiography, a number of sub-genres will be examined - biography, hagiography, chronicles and memoirs. The last section of the course will consider changes in historical perspective introduced by renaissance humanism.

HIST 820-5 Tudor and Stuart England
HIST 821-5 Early Modern Europe
HIST 822-5 Modern Great Britain
HIST 823-5 Modern Russia
HIST 824-5 Modern France
HIST 826-5 Modern European International History
HIST 828-5 European Cultural and Intellectual History
HIST 843-5 United States to 1890
HIST 844-5 United States since 1890
HIST 845-5 Latin America to 1825
HIST 846-5 Latin America since 1825
HIST 851-5 State and Society in 19th Century Middle East
HIST 852-5 State and Society in 20th Century Middle East
HIST 854-5 Imperialism in the Middle East
HIST 863-5 Colonial Administration in Africa
HIST 864-5 Tropical Africa
HIST 866-5 European Settlement in Africa
HIST 881-5 Great Britain as a Great Power Since 1763
HIST 884-5 Health and Society
This course will introduce the student to examples of the best recent work in the social history of medicine.

HIST 885-5 Law and Society
This readings course will introduce students to some of the main approaches to law and society taken by scholars in a number of different fields, including sociology, anthropology, linguistics, literature and law, and how historians have incorporated these approaches in their own studies. As well, in doing the latter, the course will also cover the main themes in the social history of crime.

HIST 886-5 International Migration
This course examines the historical literature on the dynamics of international migration with attention to its impact both on source countries and receiving countries.
HIST 887-5 North American Labour History
HIST 887 seeks to introduce students to some major themes and writings in the history of the North American working class. Most, though not all, students taking this course will be focusing their research on Canadian topics: Canadian materials - as often as not, case studies set against either an international literature or a set of questions generated out of that literature - will therefore figure centrally in the syllabus. The course is primarily concerned with class formation and class relations as opposed to labor history, although the two are not easily divided. It will begin with an overview of the evolution of both labor and working class history, and end with a consideration of modern trade unionism as a key institution in Canadian society.

HIST 888-5 Native-European Contact
This course will deal with various aspects of Native-European contract in Canada, from the French Regime to the recent past.

HIST 889-5 The History of Anthropology
This course concerns itself with the history of anthropology as practised as a subdiscipline of the history of the sciences and social sciences and relates closely to intellectual history (rather than the history of ideas). The emphasis is on North America as a region of study and as a school. The reading material is secondary and textual.

HIST 890-5 Gender and History
This is a course about historical changes in masculinity and femininity. We will discuss both the ways in which the gender identities of women and men are formed and changes, and the influences of gender relationships upon politics, society and the economy.

HIST 891-5 The French Experience in North America
This course will deal with various aspects of French-Canadian history in Canada and the United States.

HIST 892-5 Religion and Society
An examination of the textual, conceptual, and contextual background to political and social aggregation and activism in Islamic history. The first portion of the course will address classical Islamic notions of social and political action, while the second half will focus on specific Muslim religio-political and social movements in the modern period. The course is concerned with how texts are utilized and concepts invoked and transformed in particular social contexts.

HIST 897-5 Supervised Readings

HIST 898 MA Thesis

HIST 899 PhD Thesis

HIST 900 Research Project

A written research project normally with a minimum length of 35 pages, to be defended before a project committee.

Department of Linguistics
Location: 9203 Classroom Complex
Telephone: 778.782.4725
Graduate Program Chair: P. McFetridge BA, MA, PhD (S Fraser), 778.782.3632

Faculty and Areas of Research
For a complete faculty list, see the Department of Linguistics undergraduate section.

G.L. Bursill-Hall* - History of linguistics
R.C. DeArmond - Slavic linguistics, syntactic theory
D.B. Gerdts - Syntax, morphology, relational grammar
H. Hammerly - Applied linguistics, second language teaching
N. Hedberg - Syntax, semantics, pragmatics, cognitive science
N.J. Lincoln - Amerindian linguistics
P. McFetridge - Phonology, morphology, computational linguistics
Z. McRobbie - Experimental phonetics, phonology, Finno-Ugric linguistics, sociolinguistics
M. Munro - Applied linguistics, experimental phonetics, second language acquisition
T.A. Perry - Phonology, German linguistics, linguistic theory
E.W. Roberts - Linguistics, phonological, and phonetic theory
R. Saunders - Amerindian linguistics

Associate Members
S. Davis Philosophy
F. Popowich Computing Science
J.M. Sosa Spanish and Latin American Studies
W. Turnbull Psychology
J.W. Walls Communication

*emeritis

Degrees Offered
The program offers graduate work leading to the degrees of MA and PhD in Linguistics.

Applicants are considered in terms of how their proposed programs of study coincide with the research and teaching interests of the Department's faculty. 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 the Graduate General Regulations (section 1.3.4.)

Time Required for the Program
Although the University regulation allows a time limit of five years for the completion of the MA degree and eight years for the PhD, (including the work of the MA degree), an MA student is normally expected to complete the degree in two years; a PhD student in three years after the MA.

For further information and regulations, refer to the Graduate General Regulations.

MA

Admission
Students must be able to demonstrate adequate preparation in linguistics. It is not possible for students having little or no academic preparation in linguistics to gain clear admission to the program or admission as a qualifying student (see section 1.3.5 of the Graduate General Regulations).

For general admission requirements, refer to the Graduate General Regulations, section 1.

Areas of Specialization

Credit and Research Requirements

Course Work
Students must complete at least 20 credit hours in Linguistics, including LING 800 and 801.

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 are expected to show a high degree of competence in at least one language other than English.
PhD

Admission
Students will have to demonstrate a substantial background in linguistics. It is normally not possible to gain direct admission to the PhD program without an MA in linguistics, or the equivalent.

For general admission requirements, refer to the Graduate General Regulations section (1.).

Areas of Specialization

Credit and Research Requirements
These requirements are to be satisfied beyond the MA course requirements. Students may be required to take specified courses from the MA program requirements as a condition of admission to the PhD program.

Course Work
Students complete at least 16 credit hours of Linguistics courses, approved by the Supervisory Committee.

Thesis Proposal
Each candidate is required to develop a Research Proposal for a thesis based on original research. The proposal will define the intended research and the relationship between it and existing scholarship. The proposal will be presented to the Supervisory Committee for approval and presented as a colloquium.

PhD Thesis
Students must complete the thesis in accordance with University regulations.

Language Requirements
Candidates are required to show a high degree of competence in two languages besides English. They should have some knowledge of the structure of at least one non-Indo-European language. The student's Supervisory Committee will determine how the student is expected to demonstrate this linguistic competence.

Graduate Courses
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 808-4 History of 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

LING 896-4 Directed Research

LING 897-4 Research Seminar

LING 898 MA Thesis

LING 899 PhD Thesis

**Liberal Studies Program**

Location: 2100 Harbour Centre  
Telephone: 778.782.5152  
Director: S. Duguid BA (Ill), MA, PhD (S Fraser)  
Graduate Program Chair: J.L. Berggren BS, MS, PhD (Wash)

*Steering Committee*

J.L. Berggren - Mathematics and Statistics  
S. Duguid - Liberal Studies*  
M.D. Fellman - History  
R.L. Koepke - History  
G. Merler - French  
A.C. Paranjpe - Psychology  
M. Selman - Continuing Studies, Humanities  
J. Sturrock - English  
S. Wendell - Women's Studies

*joint appointment with Humanities*

The graduate Liberal Studies program leading to the degree of Master of Arts, Liberal Studies is designed for adults returning to study on a part-time basis. The program is offered at the University's Harbour Centre campus 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. Small, interdisciplinary seminars provide the opportunity for wide reading, careful reflection, and intense discussion. They are taught by Simon Fraser University faculty chosen for their expertise and teaching excellence, and for their interest in interdisciplinary studies.

**Admission**

Applicants must satisfy the Liberal Studies Graduate Program Committee of academic suitability for the program. In addition to fulfilling the normal university graduate admission requirements, prospective students must demonstrate their readiness for the program through letters of reference, samples of written work, and normally an interview. Exceptionally, the Graduate Program Committee may recommend for admission applicants who do not meet normal university requirements, but who by reason of prior experience, strong interest, and demonstrated competence are particularly suited to the program.
**Degree Requirements**
Students are required to complete six seminar courses, and to submit two extended essays or one project for oral examination. Two of the six required courses are core courses, which normally must be completed in the first two semesters of attendance (LS 800-5 and 801-5). The remaining four courses may be selected from among those offered within the program. Students may enrol for one or two courses per semester. Exceptionally, and by agreement of both the Graduate Program Committee and the department involved, a student may be permitted to take one graduate course in another department toward the Liberal Studies degree.

The extended essays will normally be developed from papers completed for course work. The project, which may make significant use of non-written media, will also be developed from work done in the courses. They will be examined as for the examination of a Masters thesis under 1.10.1 of the Graduate General Regulations.

The Liberal Studies Program is designed for students who seek educational breadth at the graduate level. It emphasizes a community of inquiry and discussion over independent research. For this reason, the program entails several special expectations, within the general regulations for graduate study at Simon Fraser University.

Students admitted to the program are required to attend an introductory short-course conducted prior to the beginning of the first core course in the Fall semester.

Supervisory committees will be arranged by the Chair of the Graduate Program Committee. By approval of the Dean of Graduate Studies, the supervisory and examination process for the extended essays or project requirement may be modified to emphasize collegial exchange.

Students should expect to participate in out-of-class activities, such as pre-class dinners, that are designed to encourage interchange among the participants, and to enhance a sense of 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, the program has been approved for part-time study. See 1.4.5 of the Graduate General Regulations.

**Liberal Studies Courses**
Liberal Studies Courses are designed as intensive seminar courses. The two core courses, LS 800 and 801, will develop a common base of readings for all students in the program. The other six regularly offered seminar courses may vary considerably in approach and in specific content on each occasion of their offering. Each of them, however, 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 the courses are cross-disciplinary in orientation and may draw on faculty from across the University to contribute expertise to the discussions.

**Graduate Courses**

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 and 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 conflicted 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. Not more than one such offering may count toward the Liberal Studies degree.

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 Program Committee in advance of registration. Not more than one such offering may count toward the Liberal Studies degree.

LS 998 MA Extended Essays
Students will present two of their essays for formal examination in order to satisfy the Simon Fraser University requirements for a Masters degree.

LS 999 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.

Department of Philosophy
Location: 4604 Diamond Building
Telephone: 778.782.3343
Chair: J.H. Tietz BA (Pacific Lutheran), PhD (Claremont)
Graduate Program Chair: P.P. Hanson BA (Calg), MA, PhD (Prin)

Faculty and Areas of Research
For a complete list of faculty, see Philosophy undergraduate section.

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
R.D. Bradley - Philosophical logic, metaphysics, logical atomism
S. Davis - Philosophy of language, philosophy of mind
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 - Modal logic, conditional logic, philosophy of language
B.T. Ramberg - Philosophy of language, continental philosophy, philosophy of mind
N.M. Swartz - Philosophy of science, metaphysics, epistemology
J.H. Tietz - Metaphysics, history of modern philosophy, history of 19th century German philosophy
D.D. Todd - Aesthetics, history of modern philosophy, epistemology
D. Zimmerman - Ethics, social and political philosophy, philosophy of mind, medical ethics

The Philosophy Departments of Simon Fraser University and the University of British Columbia co-operate in the administration of their graduate programs. A student enrolled in a graduate program at SFU is supervised by a member of the SFU department, but may count graduate courses at UBC toward degree requirements and have members of the UBC department as other members of a supervisory committee. Since Simon Fraser University operates on a trimester system, and the University of British Columbia on a sessional system, the language adopted for descriptions of course requirements is intended to be neutral as between the two systems. Thus, in what follows, "course" means "semester course" or "one term course."

Application Procedures
The Philosophy Departments of SFU and UBC co-operate in the administration of applications to their graduate programs. Prospective applicants are sent application forms for both universities and may submit applications to one or both departments. Applicants who apply to both universities may indicate a preference to enrol at one of them. Applicants who wish to be considered by both departments are asked to submit applications and supporting documents to each department.

Application Fee
An application fee of $40 is charged.

MA Program

Admission
In addition to meeting the minimum university admission requirements (see the Graduate General Regulations section), an applicant for a Masters degree normally must hold, from a recognized university, an honors Bachelors degree with a cumulative grade point average (CGPA) of 3.33 or a general Bachelors degree with a grade point average of 3.5 in third and fourth year Philosophy courses, and must submit references from qualified referees.

A student whose undergraduate work does not satisfy the above conditions may be required to complete additional undergraduate courses as a part of a graduate program, or to register as a qualifying student before consideration for admission to the MA program.

Degree Requirements
A candidate for the MA in Philosophy must

- complete four courses at the graduate level, gaining at least a second class standing (CGPA of 3.0)
- submit and successfully defend a thesis giving evidence of independent critical ability
- show competence in such foreign languages as the Graduate Studies Committee determines to be required for the proposed research. The department reserves the right to require any student to take undergraduate courses in addition to the required number of graduate courses.

PhD Program

Admission
Applications for the PhD degree must have completed:

- a Bachelors degree with first class honors (and a CGPA of 3.67 or equivalent in Philosophy courses), or
- a Masters degree (or equivalent), or
- a Bachelors degree with one year of study in a Masters program, four graduate courses with a CGPA of 3.67 and clear evidence of research ability. (Transfer directly into a Doctoral program is not normally permitted beyond the first year of study and will not be permitted after the completion of the second year in a Masters program.)
Degree Requirements

Courses
Students in the PhD program are normally required to complete twelve graduate courses, six in the first year of registration in the program, and six in the second. Students admitted after one year in the MA program are normally required to complete at least eight graduate courses beyond those completed in the MA program.

Students entering the PhD program after completing the requirements of an MA degree may have the course requirements reduced, but in no case by more than four courses. Each student's committee will recommend, according to the student's background and the requirements appropriate to the field of research, the kind and number of courses to be taken by the student.

Students entering directly from the Bachelors degree must, during the first year of graduate study, complete six courses with a CGPA of at least 3.33.

Examinations
Students are required to pass a comprehensive examination, normally by the end of the first semester of the third year of registration in the program. Upon successful completion of the comprehensive examination and an approved thesis proposal, a student is admitted to candidacy for the PhD degree.

Language Requirements
Students are required to demonstrate such competence in foreign languages as the Graduate Studies Committee deems essential to the successful completion of their proposed research.

Formal Logic Requirement
Students are required to either have, or acquire, competence in formal logic; at a minimum at the level of PHIL 210, higher when relevant to their research.

Thesis Proposal and Seminar
Before the end of the first semester of the third year in the program, a candidate for the PhD degree is required to submit a thesis proposal for approval of an examining committee consisting of the student's supervisory committee and one further member of the combined graduate department. The proposal must give evidence that the student is acquainted with the literature in the area of the proposed research and must represent a well defined program of investigation.

Before the end of the second semester of the third year of the program, the candidate must make a presentation to a colloquium of faculty and graduate students of the combined department on the subject of the proposed research.

Thesis
Students in the PhD program are required to write and defend a thesis embodying original philosophical research.

Graduate Courses
Courses in the 700 range are offered at UBC. The UBC number is given in parentheses. SFU students enrolling in these courses register in the course at SFU under the 700 number and enrol in the course at UBC under the UBC number. Registration must be approved by the Department Graduate Studies Committee.

PHIL 710-3 [510 (3-12)d] Ancient Philosophy
PHIL 712-3 [512 (3-12)d] Medieval Philosophy
PHIL 714-3 [514 (3-12)d] Early Modern Philosophy
PHIL 716-3 [516 (3-12)d] Modern Philosophy
PHIL 718-3 [518 (3-12)d] Twentieth Century Philosophy
PHIL 720-3 [520 (3-12)d] Logic
PHIL 725-3 [525 (3-12)d] Philosophy of Language
PHIL 727-3 [527 (3-12)d] Philosophy of Mathematics
PHIL 728-3 [528 (3-12)d] Foundations of Mathematics
PHIL 730-3 [530 (3-12)d] Moral Philosophy
PHIL 731-3 [531 (3-12)d] Political Philosophy
PHIL 732-3 [532 (3-12)d] Ethical Theory and Practice
PHIL 733-3 [533 (3-12)d] Issues in Biomedical Ethics
PHIL 734-3 [534 (3-12)d] Issues in Business and Professional Ethics
PHIL 735-3 [535 (3-12)d] Issues in Environmental Ethics
PHIL 736-3 [536 (3-12)d] Ethical Issues in Social Policy
PHIL 739-3 [539 (3-12)d] Aesthetics
PHIL 740-3 [549 (3-12)d] Epistemology
PHIL 750-3 [550 (3-12)d] Metaphysics
PHIL 751-3 [551 (3-12)d] Philosophy of Mind
PHIL 760-3 [560 (3-12)d] Philosophy of Science
PHIL 781-789-3 [581-589 (3-12)d] Problems
Courses in the 800 range are offered at Simon Fraser University.
PHIL 800-5 Graduate Seminar in Epistemology I
PHIL 801-5 Graduate Seminar in Epistemology II
PHIL 805-3 Directed Studies I
PHIL 810-5 Graduate Seminar in Ethics I
PHIL 811-5 Graduate Seminar in Ethics II
PHIL 815-3 Directed Studies II
PHIL 820-5 Graduate Seminar in Philosophy of Mind I
PHIL 821-5 Graduate Seminar in Philosophy of Mind II
PHIL 825-3 Directed Studies III
PHIL 830-5 Graduate Seminar in Aesthetics
PHIL 840-5 Graduate Seminar in Logic
PHIL 845-3 Directed Studies IV
PHIL 850-5 Graduate Seminar in Philosophy of Language
PHIL 855-3 Directed Studies V

PHIL 860-5 Graduate Seminar in Philosophy of Science

PHIL 870-5 Graduate Seminar in Philosophical Texts I

PHIL 871-5 Graduate Seminar in Philosophical Texts II

PHIL 880-5 Graduate Seminar in Social Philosophy

PHIL 898 MA Thesis

PHIL 998 PhD Thesis

Department of Political Science
Location: 6067 Academic Quadrangle
Telephone: 778.782.4293
Chair: S. McBride BSc (Lond), MA, PhD (McM)
Graduate Program Chair: M. Howlett BSocSci (Ottawa), MA (Br Col), PhD (Qu)

Faculty and Areas of Research
For a complete list of faculty, see Political Science undergraduate section.

A. Ciria - Comparative government and politics - Latin America, political theory
L.J. Cohen - Comparative government and politics - Soviet Union and Eastern Europe
M.G. Cohen - Public policy, women's studies, economics
T.H. Cohn - International relations, Canadian foreign policy
M.A. Covell - Comparative ethnic conflicts, African politics, comparative federalism
L. Dobuzinskis - Public policy/administration, philosophy of the social sciences, Quebec politics
L.J. Erickson - Canadian politics, political behavior, women and politics, parties
A. Heard - Canadian judicial and constitutional issues, comparative human rights
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. McBride - Canadian politics - public policy, political economy, federalism, comparative public policy
P. Meyer - Soviet relations with Japan, China Korea, east-west trade, Asia-Pacific regional security and arms control
A. Moens - International relations, comparative politics, US politics
M. Robin - Canadian social and political history, BC politics, provincial politics, labour politics
D.A. Ross - International relations, strategic studies
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

Areas of Study
Political theory
Canadian government and politics
Comparative government and politics
International relations
Public administration and public policy

Admission
For general admission requirements refer to the Graduate General Regulations section.

In addition, the department requires students to submit written statements of their current interests and proposed areas of research.
Applications for graduate work will be considered, by and large, with reference to the manner in which the proposed area of the candidate's research coincides with the teaching and research interests of the faculty.

See the list of faculty for general research interests.

Should additional course work on the part of the candidate be deemed necessary, the Graduate Studies Committee will indicate the same as a prerequisite.

**Degree Requirements**

**MA Program**

The degree program may be completed in one of two ways. In the thesis option students are required to complete four graduate courses and to write and defend a thesis of approximately 25,000 words length. In the course intensive option students are required to complete six courses, and to undertake two field examinations successfully. Under both degree options students are required to take POL 801.

For students who take the thesis option, it is required that they take two of their remaining three courses from at least two of the five fields of study offered by the department: political theory; Canadian government and politics; comparative government and politics; international relations; and public administration and public policy.

Students who undertake the course intensive option will be required to identify one of these five fields as their major area of concentration and a second area as their minor field of specialization. Examinations will then be conducted for each student in both the major and minor fields of concentration.

The field examinations will be set by a committee of no fewer than two faculty members from each field. Field examination committees for students will be established by the Graduate Program Committee at the beginning of each academic year. Each field examination committee will develop in collaboration with the Graduate Program Committee appropriate reading lists for students. The field examination committee will schedule, conduct and evaluate a three hour written examination and an oral defence of the written answers of not more than one hour's duration, Normally all students enrolled in the course intensive degree option will complete their examinations by the end of their third semester.

Any student who fails one of the field examinations, and one only, will be permitted to take a second attempt at passing the failed field examination.

**PhD Program**

The department is not currently admitting candidates to work toward the PhD degree.

**Graduate Courses**

POL 801-5 The Scope and Methods of Political Science

Students with credit for POL 813-5 may not take this course for further credit.

POL 891-5 Masters Seminar

POL 893-5 Readings in Political Science

POL 897 Field Examinations in Major Areas of MA Concentration

POL 898 Masters Thesis

**Political Theory**

POL 812-5 Political Theory

POL 814-5 Normative Political Theory
Canadian Government and Politics

POL 821-5 Canadian Government and Politics
POL 822-5 Canadian Provincial Government and Politics
POL 824-5 Canadian Federalism
POL 829-5 Legislative Internship

Comparative Government and Politics

POL 830-5 Comparative Government and Politics
POL 832-5 Government and Politics of Communist Countries
POL 838-5 Government and Politics of Industrialized Countries
POL 839-5 Government and Politics of Developing Countries

POL 861-5 Political Development
Students with credit for POL 837-5 may not take this course for further credit.

POL 862-5 Political Parties
POL 863-5 Ethnic Politics: A Comparative Approach
POL 864-5 Political Elites

International Relations

POL 841-5 International Relations
POL 842-5 International Law and Organizations
POL 843-5 Canadian Foreign Policy
POL 844-5 International Political Economy

Public Administration and Public Policy

POL 851-5 Public Policy in Canada
POL 852-5 Urban Government and Politics
POL 853-5 Public Administration
POL 854-5 Development Administration
POL 855-5 Science and Politics

Department of Psychology
Location: 5246 Classroom Complex
Telephone: 778.782.3354
Chair: C.D. Webster BA (Br Col), MA (Qu), PhD (Dal)
Graduate Program Chair: K. Bartholomew, BA (S Fraser), PhD (Stanford)
Faculty and Areas of Research
For a complete list of faculty, see Psychology undergraduate section.

B.K. Alexander - Psychology of addiction, history of psychology, temperance mentality
E.W. Ames - Infant development, development of international adoptees
P. Bakan - Cognition, brain laterality, perception
K. Bartholomew - Adult attachment, parent-child relationships, intergenerational transmission of interpersonal patterns
B.L. Beyerstein - Drugs and behavior, brain and behavior, sensation (olfaction), critical appraisal of occult and pseudo-scientific claims
A.R. Blackman - Human experimental, perception, driving, risk taking
M.L. Bowman - Clinical neuropsychology, health psychology, stress and coping, individual differences
R.M. Buehler - Social psychology, attitudes, social cognition, social influence, autobiographical memory, prediction
E.M. Coles - Psychopathology, classification and diagnosis, forensic issues
D.N. Cox - Behavior therapy and behavioral medicine, human performance, psychology and law
C.B. Crawford - Evolutionary psychology of anorexic behavior and sex biased parental investment in humans and animals
C.M. Davis - Physiological, psychophysiology
A.L. Diamond - Sensory processes, brain research
R.J. Freeman - Neuropsychology, experimental psychopathology, psychology and the law, psychosomatics
P.K. Kerig - Developmental psychopathology, child and family relationships, marital discord and divorce, gender, cross-cultural research
M. Kimball - Women and achievement, women and aging, women's friendships, theories of gender
J.E. Koepke - Infancy and early development, family development
R.F. Koopman - Measurement, multivariate methodology, numerical methods
W.R. Krane - Multivariate statistics, psychological scaling, measurement theory, experimental design
D.L. Krebs - Moral developmental, altruism, self-serving cognitive biases
R.G. Ley - Forensic psychology (criminal) adolescent psychopathology and delinquency, psychodynamic psychotherapy
M.D. Maraun - Measurement, statistics, philosophical underpinnings of empirical investigation, personality
J.E. Marcia - Psychosocial developmental theory, ego identity, psychotherapy
C.G. McFarland - Social cognition, social memory, mood and social judgment, social comparison processes
R. Mistlberger - Neural mechanisms of biological rhythms, sleep, feeding, physiological psychology, animal behavior
V. Modigliani - Emory and cognition, evolution and development of language, learning, experimental
M.M. Moretti - Self-representation and development, psychopathology in adolescents and adults, intergenerational transmission of psychopathology
J.R.P. Ogloff - Psychology and law, including ethics, jury decision-making, forensic psychology, the insanity defence, jail mental health, and the impact of law on people
A.C. Paranjpe - Theoretical psychology, theories of person, self and identity, indigenous contributions to psychology from Eastern intellectual traditions, theories of prejudice and intergroup relations
G.D. Poole - Cross-cultural comparisons of coping strategies for hospital patients, facial expressions of pain, social cognition, introductory psychology, social psychology, health psychology
R.M. Roesch - Psychology and law, including forensic assessment, jail mental health, and competency to stand trial
J.N. Strayer - Emotional and social-cognitive development, child psychopathology, empathy, developmental issues in childhood and adulthood
W. Turnbull - Pragmatics, discourse analysis, conversation analysis, social cognition
C.D. Webster - Psychology and law, prediction of violence, forensic psychology, treatability, impulsivity, motivation
B.W.A. Whittlesea - Cognition, memory, perception, concept formation, attention
R.D. Wright - Visual attention, visual perception and motion perception

Associate Members
J. Anderson Crawford - Research Laboratory
R.R. Corrado - Criminology
B.M.F. Galdikas - Archaeology
A. Horvath - Education
R. Steinberg - Counselling
P.H. Winne - Education
R.C. Ydenburg - Biological Sciences

The Psychology Department offers graduate work leading to the MA and PhD degrees. Specialization is possible in two areas: experimental and clinical psychology. Students wishing to apply for admission to these programs should contact the Graduate Program Assistant in the department for current application requirements. Students must submit the results of the Graduate Record Examination Aptitude and Advanced Test in Psychology with their application.
Application and Admission Requirements
Applicants for both the experimental and clinical programs are admitted only in the Fall semester. Students seeking admission to either program must submit all supporting documentation by the preceding February 1st. The department reserves the right to admit only those students for whom research space and appropriate faculty supervisors are available. Students must have accumulated at least 24 semester hours of courses in the experimental areas of Psychology and a course in Statistics in order to qualify for admission. Up to 6 hours of related courses deemed acceptable by the department may be counted towards the 24 hours of Psychology.

For further admission requirements, refer to the Graduate General Regulations, and the experimental and clinical programs described below.

Application as Special Student
Admission requirements for Special Students are outlined in the Graduate General Regulations. Application as a Special Student must be submitted to the Graduate Program Assistant in the department. Students seeking admission as a Special Student must obtain written permission from the instructor of each course they wish to take, and submit it, along with transcripts of previous university work, no later than ONE month prior to the semester in which they plan to undertake the proposed course of study. Special Students taking graduate courses in Psychology must obtain a minimum grade of B- in each course taken during a given semester in order to be admitted as a Special Student in subsequent semesters.

Supervisor
The department will appoint an initial faculty supervisor for each incoming student in his or her area of interest. Students must select a senior supervisor from the available faculty in the department by the end of their first semester.

Satisfactory Performance
The progress of each student will be assessed at least once a year by the department. A student must maintain a grade point average of 3.0 (see Graduate General Regulations). In addition, a course grade of less than B is not considered satisfactory at the graduate level. Any student who obtains a grade of less than B in two or more courses may be required to withdraw from the program. MA students are expected to complete their MA thesis within two years of entrance to the MA program. PhD students are expected to complete their PhD thesis within four years of entrance to the PhD program.

Program in Experimental Psychology
The PhD program in experimental Psychology provides students with specialized training in the areas of biological, cognitive, developmental, and social psychology. However, other programs may be tailored to meet the specific interests of individual students.

Admission
All applicants are required to submit scores on the Graduate Record Examination (verbal, quantitative, analytical, advanced psychology sections), official transcripts, three letters of academic reference and a statement of purpose. Students admitted with a Bachelors degree must complete the Masters program requirements (first two years) prior to admission to the PhD program. Students transferring from other graduate programs may petition the department for credit for equivalent courses.

Degree Requirements*
Students admitted to the experimental program with a Bachelors degree are required to obtain satisfactory performance in PSYC 910 (Research Design I), PSYC 911 (Research Design II), and four subject courses, and to complete an MA thesis (PSYC 898). The subject courses are: PSYC 925 (Seminar in Cognitive Processes ), PSYC 950 (Seminar in Developmental Psychology), PSYC 960 (Seminar in Social Psychology), PSYC 980 (Seminar in Biological Psychology). In the first year of the program, students are expected to complete PSYC 910, 911, and at least two of the four subject courses, and to initiate work in PSYC 898 (MA Thesis). Remaining subject courses and PSYC 898 should be completed in the second year. In addition, students may elect or be required by their supervisor to take other courses, including the core courses (PSYC 600, 601, 602, and 603).

All subject courses, as well as all other courses numbered 915 or higher, will cover specific topics in depth within a general area, and may vary in content from year to year, reflecting the major issues in the different areas. For this reason, students may register for each course more than once. For example, PSYC 925 may appear three times on a transcript: once as PSYC 925 Cognitive
Processes (Human Memory), again as PSYC 925 Cognitive Processes (Categorization Processes), and again as PSYC 925 Cognitive Processes (Problem Solving).

*Note*: Students are permitted to substitute for one, and only one, of the required subject courses. The substitute course must be a) another approved graduate course offered by the Psychology Department, or b) an approved graduate course from another department or institution. Requests for substitution must be supported by the student's Senior Supervisor, and must be submitted in advance for approval to the department Graduate Program Committee.

After successful completion of these courses and the MA thesis, students may then be admitted to the PhD program. PhD students are required to take two subject courses (in addition to those taken for the MA degree), and complete comprehensive examinations and a doctoral dissertation. Normally, the two subject courses will be in the student's area of specialization. Students admitted to the PhD program after having completed their MA at another university may be required to take additional courses, as specified by their Supervisory Committee.

**Law and Psychology Stream**

**Admission**
Admission to the law and psychology stream is open to all students admitted to the graduate training program at Simon Fraser University. The law and psychology stream is based on the traditional experimental psychology graduate training model. The traditional model is enhanced by providing students with additional course work and applied experiences.

**Requirements**
- PSYC 790-3 Proseminar in Law and Psychology
- PSYC 815-3 Mental Health Law and Policy
- PSYC 810-3 Seminar in Social Psychology and Law
- PSYC 990-3 Seminar in Law and Psychology (two are required)
- PSYC 897-3 Research Project in Law and Psychology/Forensic Psychology
- PSYC 892-3 Research/Policy Practicum in Law and Psychology

Students must also write the comprehensive examination in law and psychology.

In addition to the above requirements, students are encouraged to complete their MA and PhD theses in the area of law and psychology. Students may also wish to augment their training in the Psychology Department by completing courses in the School of Criminology at Simon Fraser University as well as the Faculty of Law at the University of British Columbia (by special permission).

**Supervisory Committees**
For the MA thesis, students must establish a Supervisory Committee before the end of their first semester in the program. The MA Supervisory Committee will consist of at least two faculty members from the Psychology Department, one of whom will be the Senior Supervisor and Chair of the Committee. Other faculty outside the department who are considered necessary by the student and Senior Supervisor may serve on the committee. The PhD Supervisory Committee should be established by the end of the first semester following admission to the PhD program. Students are required to choose a faculty member in the Psychology Department as the Senior Supervisor and Chair of the PhD Supervisory Committee and two or more additional members. At least two of the additional members must be members of the Psychology Department. One committee member must be able to act as advisor with respect to measurement and design aspects of the dissertation research.

**MA Thesis**
The Masters thesis is expected to be a piece of research of high quality. Ordinarily the research will involve the collection and analysis of empirical data. However, on occasion, non-empirical research of special merit will be accepted. In such cases, the Graduate Studies Committee should be informed in writing of the intent.

All students are required to present a written thesis proposal to their Senior Supervisor before the end of their fourth semester in the program. After the thesis has been submitted, an oral defence will be scheduled. This defence will focus on the problems, methods, results of the research, and the relation of its finding to major trends and current theoretical problems in psychology. Students are expected to have completed their MA thesis by the end of their second year in the program. For further information and regulations, refer to the Graduate General Regulations.
PhD Comprehensive Examination
A committee consisting of the candidate's PhD Supervisory Committee and faculty members in areas related to the candidate's major interests will set a written PhD Comprehensive Examination (PSYC 999) appropriate to the candidate's particular program. The examination cannot be taken before completion of the course requirements and the MA thesis but must be taken within four years of admission to the PhD program. It may be retaken only once.

PhD Dissertation
Before starting dissertation research, the candidate will present a formal proposal for evaluation. The presentation will be made at a meeting open to all members of the Department of Psychology. The candidate is required to present a dissertation proposal before the end of the second year in the program, and is expected to complete the PhD dissertation within four years of entrance to the program. The completed dissertation will be defended in oral examination. Judgement will be made by an examining committee. For further information and regulations, refer to the Graduate General Regulations.

Program in Clinical Psychology
The PhD program in clinical psychology is accredited by the Canadian Psychological Association and the American Psychological Association. It is based upon a scientific-professional model of clinical training.

Admission
All applicants are required to submit scores on the Graduate Record Examination (verbal, quantitative, analytical, advanced psychology sections), official transcripts, three letters of academic reference and a statement of purpose. Top ranked candidates will be interviewed in person or by telephone prior to final selection. Students admitted with a Bachelors degree must complete the Masters program requirements (first two years) prior to admission to the PhD program. Students transferring from other graduate programs may petition the department for credit for equivalent courses.

Degree Requirements
Requirements for completing the clinical program are summarized in Table 1. Students registered in the clinical program are required to complete satisfactorily the following three departmental core courses: PSYC 600, 601, 602. Two of these courses must be completed in the first two years of the program. In addition, students are required to complete satisfactorily PSYC 744, 770, 820/821, 822/823, 824, 880 (practicum), 910, 911, and 898. Normally, students will complete these courses in the first two years of the program. After successful completion of these courses, students may then be admitted to the PhD program and complete the remaining three years of the program (see table). (Note: students will not be permitted to register in PhD course work beyond the Fall semester of the third year of the program until the MA thesis is complete.) Students in residence in the third year and beyond are required to maintain a clinical case load and/or engage in other clinical work (e.g., program evaluation), under the supervision of clinical faculty. General supervision of students in the clinical program is exercised by the Clinical Committee.

Table 1

<table>
<thead>
<tr>
<th>Year 1 Fall Semester</th>
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<tbody>
<tr>
<td>PSYC 744-5 Proseminar in Psychopathology</td>
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<tr>
<td>PSYC 820-6 Seminar in Individual Assessment</td>
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<tr>
<td>PSYC 821-4 Practicum in Individual Assessment</td>
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<td>PSYC 910-5 Research Design I</td>
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<th>Year 1 Spring Semester</th>
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<tr>
<td>PSYC 770-5 Proseminar in Personality</td>
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<tr>
<td>PSYC 820-6 Seminar in Individual Assessment</td>
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<tr>
<td>PSYC 821-4 Practicum in Individual Assessment</td>
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<td>PSYC 911-5 Research Design II</td>
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<tr>
<th>Year 1 Summer Semester</th>
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<tr>
<td>PSYC 880-3 Practicum</td>
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Year II Fall Semester
PSYC 822-6 Seminar in Intervention
PSYC 823-4 Practicum in Intervention
PSYC 824-3 Research Design in Clinical Psychology
PSYC Core Course*

Year II Spring Semester
PSYC 822-6 Seminar in Intervention
PSYC 823-4 Practicum in Intervention
PSYC Core Course*

Year II Summer Semester
PSYC 898 Thesis

Year III Fall Semester
PSYC Core Course*
PSYC 819-2 Ethics & Professional Issues
PSYC 823-4 Practicum in Intervention
PSYC Advanced Topic

Year III Spring Semester
PSYC 823-4 Practicum in Intervention
PSYC Advanced Topic
Comprehensive Examinations

Year III Summer Semester
PSYC 899/886-9 Dissertation/Internship

Year IV Fall Semester
PSYC 823-4 Practicum in Intervention
PSYC 899/886-9 Dissertation/Internship

Year IV Spring Semester
PSYC 823-4 Practicum in Intervention
PSYC 899/886-9 Dissertation/Internship

Year IV Summer Semester
PSYC 899 Dissertation

Year V Fall Semester
PSYC 823-4 Practicum in Intervention
Internship/Dissertation

Year V Spring Semester
PSYC 823-4 Practicum in Intervention
Internship/Dissertation
Summer Internship/Dissertation

*The required core courses are PSYC 600 (Biological Bases of Behavior), 601 (Cognitive and Affective Bases of Behavior), 602 (Developmental and Social Bases of Behavior).
Clinical-Forensic Psychology Stream

Admission
Admission to the clinical-forensic psychology stream, and courses offered in the stream, are restricted to students admitted to the clinical psychology program at Simon Fraser University. Students will normally begin taking courses in clinical-forensic psychology after they have completed their second year of training in the clinical program. The clinical-forensic psychology stream is based on the scientist-practitioner model, emphasizing research, course work, and practicum training.

Requirements
- PSYC 790-3 Proseminar in Law and Psychology
- PSYC 815-3 Mental Health Law and Policy
- PSYC 835-3 Special Topics in Civil Forensic Psychology
- PSYC 836-3 Special Topics in Criminal Forensic Psychology
- PSYC 890-3 Practicum in Clinical Forensic Psychology
- PSYC 897-3 Research Project in Law and Psychology/Forensic Psychology

Students must also write the comprehensive examination in clinical-forensic psychology.

Supervisory Committee
For the MA thesis, students must establish a Supervisory Committee before the end of their first semester in the program. The MA Supervisory Committee will consist of at least two faculty members from the Psychology Department, one of whom will be the Senior Supervisor and Chair of the Committee. Other faculty outside the department who are considered necessary by the student and Senior Supervisor may serve on the Committee. The PhD Supervisory Committee should be established by the end of the first semester following admission to the PhD program. Students are required to choose a faculty member in the Psychology Department as the Senior Supervisor and Chair of their Supervisory Committee and two or more additional members. At least two of the additional members must be members of the Psychology Department, one of whom must be able to act as advisor with respect to the measurement and design aspects of the thesis research.

MA Thesis
The Masters thesis is expected to be a piece of research of high quality. Ordinarily the research will involve the collection and analysis of empirical data. However, on occasion, non-empirical research of special merit will be accepted. In such cases, the Graduate Studies Committee should be informed in writing of the intent.

All students are required to present a written thesis proposal to their Senior Supervisor before the end of the fourth semester in the program. After the thesis has been submitted, an oral defense will be scheduled. This defense will focus on the problems, methods, results of the research, and the relation of its finding to major trends and current theoretical problems in psychology. Students are expected to have completed their MA thesis by the end of their second year in the program. For further information and regulations, refer to the Graduate General Regulations.

PhD Comprehensive Examination
A written and oral PhD comprehensive examination (PYSC 999) is held once each year. This examination will be taken after successful completion of course requirements. A failed comprehensive examination may be retaken only once and must be successfully completed prior to registration in the PhD internship (PSYC 886), and before submission of the PhD thesis.

PhD Dissertation
Before starting dissertation research, the candidate will present a formal proposal for evaluation. The presentation will be made at a meeting open to all members of the Department of Psychology. The candidate is required to present a dissertation proposal before the end of the second year in the program, and is expected to complete the PhD dissertation within four years of entrance to the program. The completed dissertation will be defended in oral examination. Judgement will be made by an examining committee. For further information and regulations, refer to the Graduate General Regulations.
Graduate Courses

PSYC 600-5 Biological Bases of Behavior
PSYC 601-5 Cognitive and Affective Bases of Behavior
PSYC 602-5 Developmental and Social Bases of Behavior
PSYC 603-5 Individual Differences
PSYC 705-5 Proseminar in History and Systems
PSYC 715-5 Proseminar in Measurement
PSYC 720-5 Proseminar in Learning
PSYC 725-5 Proseminar in Cognition
PSYC 730-5 Proseminar in Perception
PSYC 740-5 Proseminar in Motivation
PSYC 744-5 Proseminar in Psychopathology
PSYC 750-5 Proseminar in Developmental Psychology
PSYC 760-5 Proseminar in Social Psychology
PSYC 770-5 Proseminar in Personality
PSYC 780-5 Proseminar in Physiological Psychology
PSYC 785-5 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
Prerequisites: PSYC 820, 821, 822, 823, 824, or permission of the instructor.
PSYC 807-3 Advanced Topics in Intervention
Prerequisites: PSYC 820, 821, 822, 823, 824, or permission of the instructor.
PSYC 808-3 Advanced Topics in Evaluation
Prerequisites: PSYC 820, 821, 822, 823, 824, or permission of the instructor.
PSYC 809-3 Advanced Topics in Applied Psychology
Prerequisites: 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 819-2 Ethics and Professional Issues
Prerequisites: Graduate Program Standing. Graded on a satisfactory/unsatisfactory basis.

PSYC 820-6 Seminar in Individual Assessment

PSYC 821-4 Practicum in Individual Assessment
Prerequisites: PSYC 880 (Practicum); registration in PSYC 820, Graduate standing in the Clinical program, or permission of the instructor.

PSYC 822-6 Seminar in Intervention

PSYC 823-4 Practicum in Intervention
Prerequisites: PSYC 880 (Practicum), registration in PSYC 822, Graduate standing in the Clinical program, or permission of the instructor. Graded on a satisfactory/unsatisfactory basis.

Note: PSYC 820, 821, 822 and 823 are all two semester courses. Single semester registration in these courses is not permitted. Students in the experimental psychology program may register in PSYC 820 and PSYC 822, but require permission of the instructor to register in PSYC 821 and PSYC 823. Students in the clinical program must register concurrently in PSYC 820 and 821, or in PSYC 822 and 823.

PSYC 824-3 Research Design in Clinical Psychology
Prerequisites: PSYC 910, 911 or permission of the instructor.

PSYC 830-6 Seminar in Child Evaluation and Treatment Formulation
Prerequisites: PSYC 750, 820.

PSYC 831-4 Practicum in Child Evaluation and Treatment Formulation
Prerequisites: PSYC 750, 820, Registration in PSYC 830.

Note: PSYC 830 and 831 will both be offered in a two semester sequence. The seminar and practicum component must be taken concurrently.

PSYC 835-3 Special Topics in Civil Forensic Psychology
Prerequisites: PSYC 790, 815.

PSYC 836-3 Special Topics in Criminal Forensic Psychology
Prerequisite: PSYC 790, 815.

PSYC 880-3 Practicum
Full-time clinical work for four months in an approved setting. Prerequisites: PSYC 744, 770, 820, 821, 910, 911. Graded on a satisfactory/unsatisfactory basis.

PSYC 886-9 Internship
Full-time clinical work for 12 months in an approved setting. Prerequisites: Equivalent of the MA Clinical program, three PhD level courses, and successful completion of the PhD Comprehensive Examinations. Graded on a satisfactory/unsatisfactory basis.

Note: Registration in PSYC 886 must be continued for a total of three consecutive semesters.

PSYC 890-3 Practicum in Clinical Forensic Psychology
Prerequisites: PSYC 790, 835 or 836.

PSYC 892-3 Research/Policy Practicum in Law and Psychology
Prerequisite: PSYC 790.
PSYC 897-3 Research Project in Law and Psychology/Forensic Psychology

Prerequisite: PSYC 790.

PSYC 898 MA Thesis

PSYC 899 PhD Thesis

PSYC 905-5 Seminar in History

PSYC 910-5 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 911-5 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 912-1.5 Research Seminar

PSYC 913-1.5 Research Seminar

PSYC 914-1.5 Research Seminar

PSYC 916-1.5 Research Seminar

PSYC 917-1.5 Research Seminar

PSYC 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 915-5 Seminar in Measurement

PSYC 920-5 Seminar in Learning

PSYC 925-5 Seminar in Cognitive Processes

PSYC 930-5 Seminar in Perception

PSYC 935-5 Seminar in Sensation

PSYC 940-5 Seminar in Motivation-Emotion

PSYC 944-5 Seminar in Psychopathology

PSYC 950-5 Seminar in Developmental Psychology

PSYC 960-5 Seminar in Social Psychology

PSYC 965-5 Seminar in Psycholinguistics

PSYC 970-5 Seminar in Personality
PSYC 980-5 Seminar in Biological Psychology

PSYC 985-5 Seminar in Animal Behavior

PSYC 990-3 Seminar in Law and Psychology
Prerequisite: PSYC 790-3.

PSYC 997-3 Directed Studies

PSYC 999 PhD Comprehensive Examination

All students in the Experimental and Clinical Psychology PhD programs are required to successfully complete the comprehensive exam.

**Canadian Centre for Studies in Publishing**

Location: 161 Harbour Centre
Telephone: 778.782.5242
Director: R.M. Lorimer BA, MA (Manit), PhD (Tor)

**Faculty and Areas of Research**

**Professors**
R.M. Lorimer, BA, MA (Manit), PhD (Tor), Director of Canadian Centre for Studies in Publishing
Publishing policy (joint appointment with Communication)
P. Heyer, BA (Sir G Wms), MA (New Sch Soc Res), MPhil, PhD (Rutgers) - History of communication and print (joint appointment with Communication)

**Professional Fellow**
R. Hancox, Dip. (Regent St. Polytechnic, Longon), PMD, Neiman Fellow (Harv) - Management editorial

**Instructors**
J. Cowan BA, MA, PhD (Br Col) - Editing, Canadian publishing
R. Woodward BA (Miami, Ohio), MA (Oregon) - Design and production

**Associate Members**
A.C.M. Beale, Communication - History of communication
T. Bose, English - Editing
P. Budra, English - Sixteenth century book production, editing Shakespeare
R.M. Coe, English - Rhetoric and composition
A. Cowan, Continuing Studies - Publishing education, editing and production
S. Delany, English - Medieval/renaissance and contemporary publishing
C. Gerson, English - History of Canadian publishing
M.A. Gillies, English - Victorian publishing
P. Heyer, Communication - History of communication and print production
C.M. Mamchur, Education - Composition
G.A. Mauser, Business Administration - Marketing
M. Page, English - Definitive and fluid drama texts
P.M. St. Pierre, English - Publication and authorship
J.O. Stubbs, History - Newspaper history
J. Zaslove, English - Literacy and literature reception

**Adjunct Professors**
R. Barnes MA (Camb) - Economics, marketing consultant
D. Bodnar BA, MA (Br Col) - Writing consultant
J.J. Douglas LLD (S Fraser) - Retired publisher, Douglas and MacIntyre
D. Gibson MA (St. Andrews), MA (Yale) - Publisher, McClelland and Stewart
C. Good BA, MA (Tor) - Publisher, Penguin Canada
P. Milroy BA (Ont) - Director, University of British Columbia Press
S. Osborne BA (Br Col) - Managing partner, Vancouver Desktop Publishing
The Program in Publishing offers a program of study leading to a Master of Publishing (M Pub) within the Faculty of Arts. The M Pub is a professional program designed for full time and part time study by persons in or intending to enter the publishing industry. It is based on a set of courses plus a project performed in an applied setting. The program encompasses the full range of publishing activities including business, design and editing.

Admission Requirements
The normal admission requirement to the M Pub program is a Bachelors degree with a minimum 3.0 average from a recognized university or the equivalent. In addition, applicants will be required a) to have some demonstrated familiarity with the publishing industry, b) to be familiar with the operation of both Apple and IBM compatible microcomputers, and c) to demonstrate a suitable level of competence in English composition.

Students entering this program will be expected to have a minimum knowledge of publishing. This knowledge will be assessed through interviews, an evaluation of documents and experience, and in some areas, an examination. Should candidates be found not to have the knowledge, understanding and skills necessary for entry, they will be advised that they may gain those skills by successfully completing 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 Publishing Industry  
CMNS 372-4 The Publishing Process  
ENGL 388-4 The Author and Book in Society

Degree Requirements
Course Work
M Pub candidates are required to complete 30 hours of course work, plus an internship worth 10 semester hours. Normally the courses will be selected from the courses offered by the program. The Director may grant some students leave to substitute courses from Simon Fraser or other institutions, and/or experience and demonstrated expertise for courses in the program.

Internship
A key component of the M Pub program is an internship with a focal project which integrates the knowledge gained during the student's graduate studies with the demands of an applied setting. This internship is to performed in the work place, typically in industry, public institutions or government. An appropriate level of documentation and reporting is required. Typically, the internship will last four months.

During the internship the student will receive academic supervision as required from the student's senior supervisor at the university. Day to day supervision will be the responsibility of designated industry supervisors. These professionals will have appropriate qualifications and will be appointed by the University. In the case of very small companies, alternative arrangements may be made for supervision.

The internship will focus on a specific project. The project will be initiated by the student, by one or more members of the student's supervisory committee or by the industry supervisor's employer. The student will draw up an outline that defines the scope of the project, plans for documentation and reporting, anticipated activities, schedule and conclusion. The outline will be approved by the student's supervisory committee and the director of the program. Commitment of the company or institution, the industry supervisor and the University will be formalized by an exchange of letters.

The student must 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. The latter will serve as a record and interpretation of the project.
The supervisory committee and director will assess the student's project on the basis of the conduct of the project, quality of the work, and quality of the reports. There will be no oral examination, however, a project report will be submitted in accordance with paragraph 1.10.6 of the Graduate General Regulations.

Graduate Courses

PUB 600-5 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 appliability of theory and practice in marketing and accounting and the legal underpinnings of publishing. (3-0-2) Prerequisite: admittance to the program.

PUB 601-5 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. (3-0-2) Prerequisite: admittance to the program.

PUB 602-5 Design and Production Control in Publishing
Part one will consider the principles and current trends in graphic design and illustration as applied in the print and electronic publishing. Students will undertake design exercises in addition to learning basic principles. Part two will examine by means of a practical project, the elements of production for printed work. (2-0-3) Prerequisite: admittance to the program.

PUB 800-5 Text and Context
An examination of the two fundamental elements that contribute to our understanding of the role of publishing in society. Part one examines the medium of print and its influence on human expression and thought. Part two discusses the publishing programs of selected contemporary publishers in a cultural and business context and as social practice. (3-0-0) Prerequisite: admittance to the program.

PUB 801-5 History of Publishing
A consideration of publishing from the time of Gutenberg to the present day. Emphasis will be placed on the role of publishing and publishing policies in Canadian and other societies. (3-0-0) Prerequisite: admittance to the program.

PUB 802-5 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. (3-0-0) Prerequisites: admittance to the program.

PUB 899-10 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.

Department of Sociology and Anthropology
Location: 5054 Academic Quadrangle
Telephone: 778.782.3146
Chair: E. Gee BA, PhD (Br Col)
Graduate Program Chair: G.B. Teeple BA, MA (Tor), DPhil (Sus)

Faculty and Areas of Research
For a complete list of faculty, see Sociology and Anthropology undergraduate section.

H. Adam - Political sociology, critical theory, nationalism, migration, Germany, southern Africa
I. Angus - Social theory, cultural theory, ecological thought, nationalism and social identity
M. Boelscher-Ignace - Practice theory, language and culture, aboriginal resource management, aboriginal peoples of northwestern North America
D. Culhane - Anthropology and feminist theory, uses of anthropology and the relationship between anthropology, western thought and contemporary culture. Historical and contemporary relations between aboriginal peoples and Canadian governments in areas of policy making
H. Dickie-Clark - Theory, sociology of knowledge, ethnic conflict
P. Dossa - Cultural Gerontology, gender, with a focus on immigrant and disabled women, anthropology of medicine, ethnic minorities
N. Dyck - Aboriginal peoples and social policy, anthropology of contemporary life, childhood and sport
K. Froschauer - Canadian social issues, social policy, political economy, development studies
B. Gartrell - Political/economic anthropology, social change, Africa
M. Gates - Development studies, agricultural policy and practice, environmental anthropology, NAFTA, Latin America, Mexico
E. Gee - Demography, sociology of aging, sociology of the family, social policy, gender
M. Howard - Development studies, cultural anthropology, ethnicity, mining, southwest Pacific, southeast Asia
M. Kenny - Anthropology of psychiatry (memory as a political issue in child abuse, amnesia and multiple personality), 19th century American social history
D. Lacombe - Contemporary social theory; democracy, citizenship and community; critical legal studies; pornography
A.T. McLaren - Sociology of women, education and the family
K. Peter - Canadian minorities, Hutterite culture, biosociology
S. Pigg - Contemporary anthropological theory, trans-national cultures and post-colonial social relations, anthropology or medicine, anthropology of development of Nepal
J. Pulkingham - Social policy, feminist political economy, gender, sociology of the family (especially family law)
H. Sharma - Marxism, development studies, revolutionary movements, labor, nation building among Canadian aboriginal peoples, south Asia
G.B. Teeple - Political economy of Canada, Hegelian and Marxist philosophy, sociology of arts, neoliberalism and the global division of labor
I.R. Whitaker - Circumpolar/subarctic, ethnohistory, family, maritime anthropology
J.M. Whitworth - Sociology of religion (especially sects, cults and new religions), sociological theory, 19th century British and North American intellectual history
R.W. Wyllie - Sociology of religion, sociology of leisure, tourism, medical sociology, west Africa (especially Ghana and Gambia)

Admission
The Department of Sociology and Anthropology offers programs of advanced learning and research leading to the MA and PhD degrees in Sociology and Anthropology.

For general admission requirements applicants should refer to the Graduate General Regulations section. The department requires the student, in addition, to produce a written statement about his/her current interests and prospective research. How well the proposed research of the applicant coincides with the research and teaching interests of faculty in the department is an important consideration for admission

PhD applicants must submit a sample of their work from earlier or ongoing graduate studies.

Applications for admission into the program are normally considered once each year at the end of January; the program commences in September.

Prospective applicants should contact the department's graduate program chair or secretary for further information about the program.

Areas of Study
Sociological Theory, Anthropological Theory, and the Philosophy of the Social Sciences (European intellectual history, holistic, comparative and historical perspectives)

Canadian Society (ethnic relations, demographic issues, social inequality, political economy)

Social and Cultural Anthropology (with emphasis upon the anthropology of modern life)
Development Studies (especially the Third World, including studies of tourism)

Politics and Sociology (with emphasis on political economy, ethnic relations and social movements)

Religion and Society

Minority Indigenous Peoples (particularly Canadian Native peoples)

Social Policy Issues (gender relations, aging, government administration of native peoples)

**Degree Requirements**

For both the MA and PhD degrees, formal course work and a thesis are required. The minimum requirements are as follows.

- 4 one semester courses
  - Two of these must be SA 850 or SA 870 (Advanced Sociological or Anthropological Theory), and SA 857 (Research Design Seminar). (In the event that a doctoral student has completed an MA in the department, course requirements remain the same as for other doctoral students, but special arrangements will be made by the Department Graduate Program Committee to ensure that SA 850 or SA 870 is not repeated.)
  - The remaining two courses will be chosen from: SA 886 Selected Problems in Social Analysis; SA Readings Courses; a course in another department or university. (The option of the Readings Courses and the extra-departmental courses must be approved by the student's supervisory committee and the departmental graduate program committee. Any student with deficiencies may be asked to complete more courses.)

- Prior to commencing work on the thesis, the student will defend a written prospectus on the thesis in an oral examination.
- A thesis (see the departmental handbook for guidelines).
- For the PhD only: a written qualifying examination in theory and methodology is required before the oral examination on the thesis prospectus.

These requirements, except for the thesis, can reasonably and normally be completed within 3 or 4 semesters.

**Graduate Seminar**

(SA 840-2, SA 841-0)

Both MA and PhD students are expected to attend and actively participate in the Graduate Seminar each semester it is offered. Grading will be restricted to satisfactory/unsatisfactory (S/U).

**Language Requirement**

Although the department recognizes that a knowledge of French or foreign languages is desirable for advanced degree studies, it does not have prescribed language requirements. However, where it is evident that a language other than English is necessary for the candidate's field work or reading, the student will be required to attain the necessary proficiency.

**Graduate Courses**

SA 840-2 Graduate Seminar

SA 841-0 Graduate Seminar

SA 850-5 Advanced Sociological Theory

SA 853-5 Readings in Sociology I

SA 854-5 Readings in Sociology II

SA 857-5 Research Design Seminar
SA 870-5 Advanced Anthropological Theory
SA 871-5 Readings in Anthropology I
SA 872-5 Readings in Anthropology II
SA 886-5 Selected Problems in Social Analysis
SA 898 MA Thesis
SA 899 PhD Thesis

Department of Spanish and Latin American Studies
Location: 5102 Academic Quadrangle
Telephone: 778.782.4774
Chair: (to be announced)
Graduate Program Chair: (to be announced)

Faculty and Areas of Research
D. Clavero - Medieval epics, colonial chronicles, history of Spanish language
R. De Grandis - Colonial, modern and contemporary Spanish American literature, literary and cultural theory, textual analysis
and gender issues
M. Escudero-Faust - Spanish literature, 17th century colonial literature, Spanish and Latin American modern theatre
J. Garcia - Latin American fiction and poetry, indigenous novel
A. Gomez-Moriana - Discourse analysis and sociocriticism, semiotics, peninsular and colonial Latin American culture
T.J. Kirschner - Twentieth century Latin American theatre and narrative, seventeenth century new world theatre
G. Otero - Political sociology; sociology of agriculture; science, technology and society; Mexico
J.M. Sosa - Hispanic linguistics, dialectology, language teaching methodology, Caribbean area sociolinguistics
G. Spurling - Anthropology, ethnohistory, the Andes, Canada and Latin America

Associated Faculty
R.E. Boyer, History
J.A.C. Brohman, Geography
A. Ciria, Political Science
M. Gates, Sociology and Anthropology
R.C. Newton, History

Admission Requirements
Applicants must satisfy the Spanish and Latin American Studies Graduate Program Committee that they are well prepared
academically to undertake graduate level work in Latin American Studies. In addition to the University requirements listed in the
General Regulations section, 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 American, and/or first hand field experience.
  Students are reminded that acceptance into the MA program is conditional on the availability of a senior supervisor
  who may be selected only from Spanish and Latin American Studies and/or associate faculty.
**MA Requirements**
The student must complete the following minimum requirements.

- Four graduate courses from the course offerings of the Latin American Studies program itself, or graduate courses in related disciplines that have been designated by the department as having full Latin American content, or more broadly listed graduate courses in related disciplines that on occasion are specifically focused on Latin America by a particular instructor. Credit for the latter courses is subject to approval by the student's supervisory committee. One of these four courses must be LAS 800-5 which will be offered yearly. The remaining courses must be approved by the student's supervisory committee.

- A written thesis proposal. All students are required to present a written thesis proposal to their senior supervisor which will be examined in an oral defence by the student's supervisory committee prior to further work on the thesis. The prospectus will normally be defended by the fourth semester in the graduate program.

- A thesis (10 credit hours) giving evidence of independent research and critical abilities. The completed thesis shall be judged by the candidate's examining committee at an oral defence. The thesis may be written in English or Spanish.

**Other Graduate Courses with Latin American Content**
The following courses may be acceptable for inclusion in the Latin American Studies MA program. Students should note that permission may be required from the departments in which these courses are offered and that some courses may require prerequisites.

GEOG 845-5 Geography, Development Theory and Latin America  
HIST 845-5 Latin America to 1825  
HIST 846-5 Latin America since 1825

In addition, some more broadly listed course may be acceptable for inclusion in the Latin American Studies MA program if they are focused on Latin America. However, credit for these courses is subject to their designation as full content Latin American courses by the Latin American Studies Graduate Program Committee. Some of these courses are:

CMNS 845-5 Communication and International Development  
ECON 855-4 Theories of Economic Development  
GEOG 736-4 Resources and Environmental Issues in the Growth of Food Production  
GEOG 740-4 Geography and the Third World  
GEOG 745-4 Multinational Corporations and Regional Development  
HIST 882-5 Conceptions of Colonialism and Imperialism  
POL 839-5 Government and Politics of Developing Countries  
SA 850-5 Advanced Sociological Theory  
SA 870-5 Advanced Anthropological Theory

**Special Arrangements**
Students seeking admission to a doctoral program in Latin American Studies, or to a Masters or doctoral program in Spanish, may apply under the Special Arrangements provisions of the Graduate General Regulations section 1.3.4.

**Latin American Studies Graduate Courses**

LAS 800-5 Foundations of Latin American Society and Culture  
An annual interdisciplinary seminar taught by selected Latin American Studies faculty examining core theoretical and substantive themes in Latin America.

LAS 810-5 Latin America: Development Theory in Transition  
An examination of models of social change as applied to the Third World in general and Latin American in particular and the relation of these theories to contemporary strategies of development.

LAS 811-5 Latin America and US Foreign Policy  
An analysis of 20th century US policies toward Latin America from both North American and Latin American perspectives.
LAS 812-5 Indigenism in Latin America
A multidisciplinary analytical perspective of cultural duality and its socio-political implications in contemporary Latin America.

LAS 813-5 Agrarian Structure and Political Power
Theories and case studies of agrarian structures, peasant movements, and state intervention in Latin America.

LAS 830-5 Literature and Ideology
Analytical study of ideology in contemporary Latin American Literature: form and content.

LAS 831-5 Colonial Discourse
Introduction to the discourse of the conquest, colonial and early independence periods.

LAS 850-5 Selected Topics in Latin American Studies
Course content will vary according to the particular topic and the faculty that will be teaching the course.

LAS 851-5 Directed Readings I 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 will be required.

LAS 852-5 Directed Readings II 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 will be required.

LAS 898 MA Thesis

Department of Women's Studies
Location: 6203 Academic Quadrangle
Telephone: 778.782.3333
Chair: M.L. Stewart BA (Calg), MA, PhD (Col)
Graduate Program Chair: S. Wendell BA (NY State), PhD (Br Col)

Faculty and Areas of Research
M.G. Cohen, Political Science - feminist economics, public policy
M. Kimball, Psychology - women and achievement, gender differences in intellectual skills, women and aging, feminist psychoanalysis, feminist critiques of science, feminist theories of gender
J. Levitin, Contemporary Arts - women and film: theory and production, women and comedy, Third World film and women
M. MacDonald, Women's Studies - feminist critiques of science, engineering and technology, feminist perspectives on science and environmental education, eco-feminism, women and population dynamics/evolutionary theory
M.L. Stewart, History - women in Europe, especially France
S. Wendell, Women's Studies - feminist social and political theory, feminist ethics, feminist epistemology, women and disability

Associate Members
A. Lebowitz, English
A.T. McLaren, Sociology/Anthropology
K. Mezei, English
C. Nesmith, Geography

The Masters program in Women's Studies is an interdisciplinary program and it is possible, therefore, for the Masters student, in co-operation with the Women's Studies Graduate Committee, to create an individualized program of studies to suit the student's scholarly interests and goals.

The program is designed to lead to a strong academic research degree. Students will be expected to develop and demonstrate intellectual and analytical skills within a specific area of study.

The program recognizes the special needs of persons already working who may wish to improve their qualifications. Some graduate courses will regularly be offered at night, and part-time students are permitted.
Admission Requirements
Applicants must satisfy the Women's Studies Graduate Program Committee that they are prepared academically to undertake graduate level work in Women's Studies.

In addition to University requirements, listed in the Graduate General Regulations section, the program requires

- a sample of scholarly work in the form of a substantial essay which is scholarly in format and approach. The paper submitted may be an undergraduate essay previously prepared, or one specially written for this purpose.
- a short statement of 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.

Qualified students will be accepted into the MA program only if a suitable senior supervisor is available and willing to supervise the student. Senior supervisors will be selected only from joint appointees in Women's Studies and continuing faculty members on the Co-ordinating Committee of the Women's Studies Department.

A student with incomplete academic preparation for the MA program may be required to take up to 12 hours of additional work in either Women's Studies or another program relevant to her/his 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 semester hours of graduate seminars, including at least one of WS 800-5 or 822-5, maintaining at least a 3.0 CGPA, and
- Submit a thesis or two extended essays giving evidence of independent research and critical abilities. An MA thesis is expected to be an in-depth empirical or theoretical study. The normal length of the thesis is 60-120 pages. Extended essays are defined as scholarly papers that meet the same standards of excellence as a thesis; they will be examined in the same way as a thesis, 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 take an oral examination on her or his thesis or papers at the end of the MA program. For further information, see the Graduate General Regulations section.

Supervisory Committee
Following enrollment by the student in the program, a Supervisory Committee will be formed, which shall have the responsibility for determining, in consultation with the student, the projected program of study, selecting appropriate research topics, and ensuring that the candidate fulfills all degree requirements. The senior supervisor will be selected from joint appointees in 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.

Graduate Courses
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 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 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 MA Thesis

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**Applied and Computational Mathematics Program**
Location: 10512 Shrum Science Centre
Telephone: 778.782.3331
Chair: K. Heinrich BMath, PhD (N'cle, NSW)
Graduate Program Chair: G.A.C. Graham BA (Dub), MS (Brown), PhD (Glas)

The Program in Applied and Computational Mathematics is one of the graduate programs offered by the Department of Mathematics and Statistics.

**Faculty and Areas of Research**
G.N. Bojadziev - Differential equations; population dynamics, control dynamics
A. Das - Variational techniques; interior solutions in general relativity
G.A.C. Graham - Analytical and computational methods in viscoelastic fracture and contact mechanics
M.C.A. Kropinski - Numerical solutions of non-linear differential equations; fluid dynamics
R.W. Lardner - Computational fluid dynamics: oceanography, asymptotic methods, nonlinear waves
E. Pechlaner - Relativistic continuum mechanics: approximation methods, self-similarity
R.D. Russell - Numerical analysis: numerical solution of differential equations, dynamical systems
C.Y. Shen - Electromagnetic scattering; large-scale scientific computing
E.M. Shoemaker - Environmental mathematics: glaciology, Plasticity
M. Singh - Nonlinear stability and perturbation methods
T. Tang - Computational fluid dynamics, numerical partial differential equations
M.R. Trummer - Numerical analysis: differential equations, integral equations

Admission
For admission requirements, refer to the Graduate General Regulations.

Applicants are normally required to submit scores in the aptitude section and an appropriate advanced section of the Graduate Record Examinations of the Educational Testing Service.

Applicants with backgrounds in areas other than mathematics, for example, a Bachelors degree or its equivalent in Engineering or Physics may be considered suitably prepared for these programs.

Degree Requirements

MSc Program
A candidate for the MSc degree will normally be required to obtain a total of 28 semester hours of credit for course work beyond courses taken for the Bachelor's degree. These 28 hours will consist of a core program containing the six courses listed below together with a further four hours of credit which may be at the graduate level or at the 400 undergraduate level. The six core courses are

- MATH 900-4 Advanced Mathematical Methods I
- MATH 901-4 Advanced Mathematical Methods II
- MATH 920-4 Numerical Linear Algebra
- MATH 922-4 Numerical Solution of Partial Differential Equations
- MATH 930-4 Fluid Dynamics
- MATH 935-4 Mechanics of Solids

In addition to this course requirement the student will be required to complete a project which will normally involve a significant computational component and to submit and successfully defend a report on that project. This project is intended to be completed within about one semester.

PhD Program
A candidate for the PhD degree will be required to obtain at least a further 8 semester hours of credit for course work in graduate level courses beyond the requirements for the MSc degree. Candidates who are admitted to the PhD program without completing a MSc degree will be required to obtain credit or transfer credit for an amount of course work equivalent to that obtained by students who first complete a MSc degree.

Candidates for the PhD will normally be required to pass a general examination which will cover the subjects treated in the six core courses listed in the MSc requirements. A candidate ordinarily will not be allowed to take the general examination more than twice. Students who have completed a Masters degree will normally be required to attempt the general examination within one year of their initial registration in the PhD program.

A candidate for the PhD degree will be required to submit and defend a thesis based on his or her own original work and which will embody a significant contribution to mathematical knowledge.

Graduate Courses
Note: course descriptions for MATH 800 - 899 appear in the Mathematics and Statistics section while those for STAT 801- 890 can be found in the Statistics Program section.

MATH 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 314-3 or equivalent. MATH 419-3 is recommended.

MATH 901-4 Advanced Mathematical Methods II

MATH 902-4 Applied Complex Analysis
Review of complex power series and contour integration. Conformal mapping, Schwartz-Christoffel transformation. Special functions. Asymptotic expansions. Integral transform. Prerequisite: MATH 322-3 or equivalent. Students with credit for MATH 836-4 may not take MATH 902-4 for further credit.

MATH 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 900-4 or permission of the instructor.

MATH 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 415-3 or equivalent. Students with credit for MATH 842-3 may not take MATH 910-4 for further credit.

MATH 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 901-4 or permission of the instructor. Students with credit for MATH 845-4 may not take MATH 912-4 for further credit.

MATH 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. Prerequisite: Students with credit for MATH 850-4 may not take MATH 920-4 for further credit.

MATH 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. Prerequisite: Students with credit for MATH 851-4 may not take MATH 921-4 for further credit.

MATH 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. Prerequisite: Students with credit for MATH 852-4 may not take MATH 922-4 for further credit.

MATH 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. Prerequisite: Students with credit for MATH 853-4 may not take MATH 923-4 for further credit.

MATH 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.

MATH 930-4 Fluid Dynamics
Basic equations and theorems of fluid mechanics. Incompressible flow. Compressible flow. Effects of viscosity. Prerequisite: MATH 361-3 or equivalent. MATH 462-3 is recommended.
MATH 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: MATH 930-4 or permission of the instructor.

MATH 935-4 Mechanics of Solids
Analysis of stress and strain. Conservation laws. Elastic and plastic material behavior. Two and three dimensional elasticity. Variational principles. Wave propagation. Prerequisite: MATH 361-3 or equivalent. MATH 468-4 is recommended. Students with credit for MATH 883-4 may not take MATH 935-4 for further credit.

MATH 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: MATH 935-4 or permission of the instructor.

MATH 940-4 Mathematical Elasticity

MATH 945-4 Plasticity
An introduction to the mathematical theory of plasticity. Topics normally will include yield criteria and flow rules, torsion and bending, plane strain solutions and limit load analysis. Students with credit for MATH 890-4 may not take MATH 945-4 for further credit.

MATH 948-4 Continuum Mechanics
General introduction to modern theories of the mechanics of continuous media. Topics may include linear and non-linear elasticity, viscoelasticity, Newtonian and non-Newtonian fluids and multipolar materials. Students with credit for MATH 881-4 may not take MATH 948-4 for further credit.

MATH 950-4 Tensor Analysis on a Differentiable Manifold
A first graduate course dealing with the following topics: tensor algebra, tensor fields on differentiable manifolds, differential forms, invariant problems in the calculus of variation, metric field theory and Einstein's equations.

MATH 960-4 Mathematical Foundations of Quantum Mechanics I
Historical introduction; Minkowskian space-time and Lorentz group; brief review of multilinear algebra; representation of Lorentz group in tensor spaces; representation of Lorentz group in spinor spaces; irreducible representations of Lorentz group; relativistic wave equations. Study of Lie group generated by elements of Lorentz group in neighborhood of identity. Students with credit for MATH 885-4 may not take MATH 960-4 for further credit.

MATH 964-4 General Relativity I
Historical introduction; review of tensor calculus in pseudo-Riemannian space. The world function w(X,X1) and chronometry; pseudo-Riemannian space-time; the material continuum and Einstein's field equations. Differential and integral conservation laws and equations of motion; universes with spherical symmetry and application to planetary systems; statical universes; stationary universes. Students with credit for MATH 885-4 may not take MATH 964-4 for further credit.

MATH 965-4 General Relativity II
Further studies of pseudo-Riemannian geometry; tetrad formalism and Ricci rotation coefficients; Petrov's classification of special Einstein spaces X4. Gravitational radiations; coupled electro-gravitational universes; combined Klein-Gordon-Maxwell-
Einstein field equations; comments on geometrodynamics. Students with credit for MATH 888 may not take 965 for further credit.

MATH 990-4 Selected Topics in Applied Mathematics

**Aquaculture Program**
Location: B8269 Shrum Science Centre
Telephone: 778.782.3193
778.782.3496 Fax
Director: E.B. Hartwick BSc, MSc (Tor), PhD (Br Col)

*Faculty and Areas of Research*
L.J. Albright - Salmonid and prawn diseases
P. Copes - Fisheries economics
J.C. Day - Coastal zone management
D.J. Devoretz - Demand for wild and cultured salmon
L.D. Druehl - Kelp culture
P.V. Fankboner - Pearl and abalone culture
E.B. Hartwick - Invertebrate culture
B.A. McKeown - Growth, reproduction and nutrition of finfish
L.N. Meredith - International and business marketing
R.W. Schwindt - Organization and regulation of salmon aquaculture

*Adjunct Professors*
T.P.T. Evelyn, BFA, MSA (Tor), PhD (Br Col)
V. Lipovsky, BS (Ohio), MSc, PhD (Wash)

Before entering the program students should have completed the following courses or their equivalents. These prerequisites may be waived by the Departmental Graduate Studies Committee under special circumstances on recommendation from the director of the program.

- BISC 303-3 Microbiology
- BISC 306-3 Invertebrate Biology
- BISC 326-3 Biology of Non-Vascular Plants
- BISC 416-3 Fish Biology

This program may be taken on a part-time basis.

**Program Requirements**
The Master of Aquaculture program will require successful completion of at least 36 credits of graduate level course work.

**Semester 1 (12 credits)**

- BISC 630-5 Introduction to Aquaculture Systems
- BUS 543-4 Introductory Graduate Marketing
- MRM 615-5 Management of Aquaculture Resources

**Semester 2 (15 credits)**

- BISC 631-5 Growth, Reproduction and Nutrition in Aquaculture Systems
- BISC 632-5 Salmonid and Shellfish Diseases and Their Control
- BISC 633-1 Current Topics in Aquaculture
- ECON 663-4 The Economics and Management of Aquaculture

Semester 3

BISC 635-0 Practicum and Research Paper
Semester 4
At least nine credits of electives and enrollment in BISC 635 is required.

Elective Courses
A minimum of nine credits is required. Courses should be chosen from the following list after consultation with a faculty advisor, depending on the student's interest, background and future employment expectations.

Biological Aspects
BISC 805-3 Endocrinology
BISC 814-3 Aquatic Ecology
BISC 815-3 Plant Physiology
BISC 832-3 Marine Microbiology
BISC 843-3 Population Processes
and one special topics course

Business Administration
BUS 507-4 Managerial Economics
BUS 512-4 Introduction to Business Finance
BUS 528-5 Accounting
BUS 536-4 Quantitative Methods in Management
BUS 572-4 Organizations and Human Resource Management

Resource Management
MRM 611-5 Population and Community Ecology
MRM 612-5 Management Models of Biological Resources
MRM 613-5 Current Topics in Fisheries Management

Regional Resource Planning for Aquaculture
MRM 621-5 Economics of Natural Resources
MRM 642-3 Regional Planning I
MRM 644-5 Environmental and Social Impact Assessment

Economics
ECON 863-4 Fisheries Economics
ECON 864-4 Studies in Economic Fisheries Management

Graduate Courses
The courses listed below are designed for students undertaking the Master of Aquaculture degree. Some of these courses may be available for graduate course credit for Master of Science and Doctor of Philosophy students on recommendation of the Supervisory Committee and approval of the Departmental Graduate Studies Committee.

BISC 630-5 Introduction to Aquaculture Systems
An introduction to aquaculture and review of the major cultivated groups - fish, invertebrates and algae.

BISC 631-5 Growth, Reproduction and Nutrition in Aquaculture Systems
Growth, reproduction and nutrition for the major groups cultivated.

BISC 632-5 Salmonid Fish Diseases and Their Control
Pathophysiology and systematic pathology of salmonids, various viral, bacterial, fungal, protozoan, metazoan and phytoplankton diseases of salmonids - isolation and detection.

BISC 633-1 Current Topics in Aquaculture
A seminar series on aquacultural topics related to BISC 630-5, 631-5 and 632-5.
BISC 635-0 Practicum and Research Paper
Six weeks of experience at a commercial aquaculture operation according to student's interests as well as a research paper.

Department of Biological Sciences
Location: B8255 Shrum Science Centre
Telephone: 778.782.4475
Chair: B.A. McKeown BSc (Br Col), PhD (S Fraser)
Graduate Program Chair: M.L. Winston BA, MA (Boston), PhD (Kansas)

Faculty and Areas of Research
For a complete list of faculty, see Biological Sciences undergraduate section. See also Centre for Pest Management.

L.J. Albright - Marine microbiology, fish diseases
G.S. Anderson - Forensic medical and veterinary entomology
D.L. Baille - Genetics, developmental biology
A.T. Beckenbach - Population genetics, biometrics
B.P. Beirne - Pest management
L.I. Bendell-Young - Fate and effects of contaminants on aquatic and terrestrial systems
C.M. Boone - Molecular biology and genetics
J.H. Borden - Forest entomology, pheromones
B.P. Brandhorst - Developmental biology, molecular biology
F. Breden - Population genetics, evolution of social behavior
R.C. Brooke - Plant ecology, physiological ecology
A.H. Burr - Biophysics, photobiology, neurobiology
E.G. Cooch - Population biology and evolutionary ecology
F. Cooke - Population biology
B.J. Crespi - Behavioral ecology
K.R. Delaney - Nuerophysiology
L.M. Dill - Behavioral ecology
L.D. Druehl - Marine phycology, ecology
P.V. Fankboner - Pearl culture, marine invertebrate biology
A.P. Farrell - Cardiovascular physiology, environmental toxicology
T. Finlayson - Insect taxonomy
F.J.F. Fisher - Evolution and ecophysiology of plants
G.J. Gries - Behavioral ecology, chemical ecology
A.S. Harestad - Wildlife biology
E.B. Hartwick - Marine invertebrate ecology, cephalopod biology
N.H. Haunerland - Biochemistry, insect physiology
B.M. Honda - Molecular biology, biochemistry
L.L. Jones - Seabird ecology, sexual selection
C.J. Kennedy - Aquatic toxicology
A.R. Kermode - Plant molecular biology
D.B. Lank - Behavioral ecology, population biology
F.C.P. Law - Environmental toxicology
L.F.W. Lesack - Ecosystem biogeochemistry, limnology; land-water interactions
G.R. Lister - Plant physiology
J.P.M. Mackauer - Insect parasitology, biological control, systematics
R.W. Mathewes - Paleoecology, palynology
B.A. McKeown - Endocrinology
M.M. Moore - Toxicology, microbiology
R.A. Nicholson - Pesticide biochemistry, toxicology
A.L. Plant - Root specific gene expression, osmotic stress, seed specific gene expression, modulation by ABA, osmotica
J.V. Price - Developmental genetics
Z.K. Punja - Plant biotechnology and pathology
J.E. Rahe - Plant pathology, pest management
B.D. Roitberg - Population dynamics, insect behavioral ecology
M.J. Smith - Molecular biology, development and evolution
L.M. Srivastava - Plant physiology and molecular biology, biology of seaweeds
N.A.M. Verbeek - Ornithology, field ecology
W.E. Vidaver - Photobiology, algal physiology
J.M. Webster - Nematology, parasitology
T.D. Williams - Physiological ecology
M.L. Winston - Apiculture, social insects
R.C. Ydenberg - Behavioral ecology

Associate Members
C.B. Crawford, Psychology
B.M.F. Galdikas, Archaeology
M. McClaren, Education
R.M. Peterman, Resource and Environmental Management
R.D. Routledge, Mathematics
H. Weinberg, Psychology

Adjunct Professors
N.P.D. Angerilli, BSc, PhD (S Fraser)
R.W. Baron, BSc, MSc, (Manit), PhD (McG)
P. Belton, BSc (Lond), PhD (Glas), ARCS
W.D. Binder, BSc, MSc (Vic, BC), PhD (Oregon State)
J.R. Byers, BSA, MSc, PhD (Sask)
H.L. Ching, BA, MSc (Oregon State), PhD (Ne)l
R.H. Devlin, BSc, PhD (Br Col)
K.C. Eastwell, BSc, PhD (Alta)
T.P.T. Evelyn, BSA, MSA (Tor), PhD (Br Col)
W.G. Friend, BSc (McG), PhD (C'nell)
G.J.R. Judd, BSc, MPM, PhD (S Fraser)
M.S. Graham, BSc (Guelph), PhD (Nfld)
Z. Kabata, BSc, MSc, PhD (Aberdeen)
E. Kafer, Dip, DPhil (Zur)
K.K. Klein, DipAg, BSA, MSc (Sask), PhD (Purdue)
V.P. Lipovsky, BS (Finlay, Ohio), MSc, PhD (Wash)
H.R. MacCarthy, BA (Br Col), PhD (Calif)
L. Margolis, BSc, MSc, PhD (McG)
K. Martin, BSc (PEI), MSc, PhD (Qu)
D.L. Struble, BA, MA, PhD (Sask)
R.S. Utkhede, BSc, MSc (Nag), PhD (IARI)
R.S. Vernon, BSc, MPM, PhD (S Fraser)
T.C. Vrain, DUES, MSc, (Univ de Caen), PhD (N Carolina State)
I.R. Walker, BSc (Mt Allison), MSc (Wat), PhD (S Fraser)

Admission - MSc and PhD
For admission requirements, refer to the Graduate General Regulations.

For admission to the Master of Pest Management program, refer to the Centre for Pest Management section.

Biochemistry and Molecular Biology
Students wishing to undertake graduate studies in molecular biology or biochemistry should refer to the the Molecular Biology and Biochemistry Program in the Graduate Studies section of the Calendar.

Biophysics
Students who wish to undertake interdisciplinary work in Biophysics, may apply to the Department of Biological Sciences or the Department of Physics. Those who wish to work in Biophysics under special arrangements, should refer to the Graduate General Regulations.

Post Baccalaureate Diploma in Environmental Toxicology
A post baccalaureate diploma is offered in Environmental Toxicology. Please see the Biological Sciences undergraduate section for details.
Degree Requirements for MSc and PhD

All MSc and PhD programs require a thesis based on original research.

Each PhD student is required to pass an oral candidacy examination prior to the end of the 4th semester in the program or second semester after transfer from the MSc program. The examination will concentrate on the student's area of research and will follow submission of a written PhD research proposal. The examination will be graded acceptable/unacceptable. Students whose examination is graded unacceptable will be required to pass a second examination within six months; a student receiving a second unacceptable rating will normally be required to withdraw from the PhD program.

The PhD program requires a minimum of 3 courses totalling not less than 8 semester hours of course work beyond any Masters degree to be taken while the student is enrolled in a PhD program at Simon Fraser University. Of these 8 hours, at least 6 are to be in graduate courses numbered in the 800s, and the remaining hours may be chosen from courses at the graduate or upper division undergraduate level within the candidate's department, or in an ancillary department. Where approval is obtained in advance, a PhD student may take up to one-half of the above course requirement at another university for credit toward the PhD degree at Simon Fraser University.

For PhD students, the thesis Examining Committee will include one or more Public Examiners (see Graduate General Regulations 1.9.3(c)).

For detailed information on graduate programs in Biological Sciences, contact the Chair, Department Graduate Studies Committee.

Biological Sciences Graduate Courses

BISC 630-5 Introduction to Aquaculture Systems
An introduction to aquaculture and review of the major cultivated groups - fish, invertebrates and algae.

BISC 631-5 Growth, Reproduction and Nutrition in Aquaculture Systems
Growth, reproduction and nutrition for the major groups cultivated.

BISC 632-5 Salmonid Fish Diseases and Their Control
Pathophysiology and systematic pathology of salmonids, various viral, bacterial, fungal, protozoan, metazoan and phytoplankton diseases of salmonids - isolation and detection.

BISC 633-5 Current Topics in Aquaculture
A seminar series on aquaculture topics related to BISC 630, 631, and 632.

BISC 635-0 Practicum and Research Paper
Six weeks experience at a commercial aquaculture operation according to student's interests as well as a research paper.

Courses BISC 650-3, 651-3 and 652-3 are designed for students undertaking the Extended Studies Diploma in Environmental Toxicology. They are available for graduate course credit for MSc and PhD students on recommendation of the Supervisory Committee.

BISC 650-3 Industrial Toxicology
Overview and study of the toxic effects of the major contaminants and waste products present in the environment due to the industrial activity of the human population. Prerequisite: BISC 313-3 or equivalent.

BISC 651-3 Food and Drug Toxicology
Investigates those toxic compounds in the environment which are added to, contaminate, or supplement one's diet. Prerequisite: BISC 313-3 or equivalent.

BISC 652-3 Problem Analysis in Environmental Toxicology
Provides the student with practical experience of the methods used to monitor toxic agents in the environment. Prerequisites: BISC 650, BISC 651 or permission of the department.
BISC 804-3 Plant Ecology
Directed study and discussion of current literature related to terrestrial plant ecology particularly environmental relationships. Particular topics to be arranged.

BISC 805-3 Comparative Endocrinology
A comprehensive account of morphological and physiological aspects of endocrine systems in various groups of animals. Principles of methods and techniques in endocrinological research.

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 808-3 Biological Electron Microscopy
Theoretical and laboratory instruction in biological specimen preparation and light and electron microscopy. Includes techniques of tissue fixation, embedment, sectioning and staining; principles of image formations; and evaluation of image defects. For advanced students.

BISC 810-4 Ionizing Radiations and Radioisotopes in Biology
An introduction to the use of radiations and radioisotopes in biochemical and physiological investigations. Part I - Biological effects of radiations, and Part II - Principles of radiotracer methodology.

BISC 811-3 The Molecular Biology of Prokaryotes
Selected modern studies in this area will be critically reviewed. Prerequisite: permission of the department.

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 Forest Insects Bionomics, ecology, economic impact, and management of the major groups of forest insects, based on intensive reviews of information on representative species. Prerequisite: BISC 317 or permission of the department.

BISC 817-3 Social Insects
A seminar course based on current readings concerning the nature and evolution of insect social behavior.

BISC 821-3 Biology of Visual Photoreceptors
Physiological and biochemical aspects of photoreception.

BISC 824-3 Survival Strategies
An examination of how organisms acquire, sequester and allocate the resources necessary for survival. Prerequisite: BISC 407 or 410 or permission of the department.

BISC 827-3 Behavioral Ecology Seminar
An introduction to the important issues, methods and philosophy of behavioral ecology, and discussion of current topics. Grading will be on an S/U basis. Prerequisites: BISC 304 and 410 or permission of the department.

BISC 832-3 Marine Microbiology
The relationship of marine microbes to the biological, chemical and physical parameters of the oceanic environment. Prerequisite: permission of the department.

BISC 834-4 Marine Plant Ecology
Lectures and student projects on the relationships of marine plants to their physical and biological environments. Benthic algae will be stressed.
BISC 836-3 Reproductive Strategies
An examination of the behavioral, ecological and life history means whereby organisms maximize their lifetime reproductive success.

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. The major areas of emphasis are ecology and the control of soil-borne plant pathogens, and the nature and utilization of host resistance for the control of plant diseases.

BISC 842-3 Insect Development and Reproduction
Analysis of hormonal factors that influence growth, development, and reproduction in insects, with emphasis on the use of hormone analogues and anti-metabolites for population management.

BISC 843-3 Population Processes
Survey of the operation and measurement of population dynamics and behavioral ecology in determining the fluctuation and regulation of animal, especially insect, populations.

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 845-3 Physical Controls
The principles, theory and operation of physical agents and processes in the natural and applied control of harmful organisms.

BISC 846-3 Insecticide Chemistry and Toxicology
The chemistry of insecticides, with emphasis on their toxicology, metabolism and fate in the environment.

BISC 847-3 Pest Management in Practice
Status and special problems of pest management programs in different kinds of ecosystems; organization, special characteristics, practices, and problems of pest management agencies; interactions and communication.

BISC 848-3 Nematology
A study of the concepts of host-parasite relationships as exemplified by nematode parasites of plants and insects. Special problems associated with the nematode organism and its way of life and their relevance to crop production. Prerequisite: permission of the department.

BISC 850-3 Weed Biology and Control
A survey of the biological and ecological characteristics of weeds, the types and magnitudes of damage they cause, and the theory and principles of control.

BISC 851-3 Vertebrate Pests
An evaluation of the biology and of the economic and social impacts of vertebrates that are in conflict with human activities; and a discussion and evaluation of actual and potential control techniques as applied to such animals.

BISC 852-3 Medical and Veterinary Entomology
Analyses of problems in the management of insects and related organisms that directly harm or that carry diseases of man or livestock.

BISC 859-3 Special Topics I
Selected topics in Biological Science. The content of this course varies from semester to semester.

BISC 861-3 The Molecular Biology of Eukaryotes
Current research literature will be examined in detail. Prerequisite: permission of the department.
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 I
A specific topic in the field of pest ecology and management, not otherwise covered in depth in regularly scheduled courses.

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 which will be discussed will vary from semester to semester.

BISC 889-3 Directed Reading
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 898 MSc Thesis
BISC 899 PhD Thesis

**Marine Science Courses**
Marine science courses, which may be included in a Biology graduate program at Bamfield, BC, are offered in conjunction with certain other universities.

The following courses are available for graduate course credit for MSc and PhD students on recommendation of the Supervisory Committee.

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 Station.

MASC 501-3 Special Topics
Courses offered, as opportunities arise, by distinguished scientists who are visiting the Bamfield Marine Station and are prepared to offer a course extending over a six week period.

MASC 502-3 Special Topics
Courses offered as opportunities arise, by distinguished scientists who are visiting the Bamfield Marine Station and are prepared to offer a course extending over a three week period.
Department of Chemistry
Location: C8035 Shrum Science Centre
Telephone: 778.782.3590
Chair: R.G. Korteling AB (Hope), PhD (Calif)
Graduate Program Chair: S. Holdcroft BSc (Salf), PhD (S Fraser)

Faculty and Areas of Research
For a complete list of faculty, see Chemistry undergraduate section.

G. Agnes - Analytical chemistry
T.N. Bell - Physical chemistry
A.J. Bennet - Organic chemistry
T.J. Borgford - Biochemistry
Y.L Chow - Organic chemistry
R.B. Cornell - Biochemistry
R.J. Cushley - Physical biochemistry
J.M. D'Auria - Nuclear chemistry
F.W.B. Einstein - Inorganic chemistry
I.D. Gay - Physical chemistry
R.H. Hill - Inorganic chemistry
S. Holdcroft - Polymer chemistry
C.H.W. Jones - Radiochemistry
E. Kiehlmann - Organic chemistry
R.G. Korteling - Nuclear chemistry
G.W. Leach - Physical chemistry
S.K. Lower - Physical chemistry
G.L. Malli - Theoretical chemistry, chemical physics
A.C. Oehlschlager - Bio-organic chemistry
P.W. Percival - Physical chemistry, nuclear chemistry
L.K. Peterson - Inorganic chemistry
B.M. Pinto - Organic chemistry
R.K. Pomeroy - Inorganic chemistry
W.R. Richards - Biochemistry
J. Scott - Biochemistry
D. Sen - Biochemistry
K.N. Slessor - Bio-organic chemistry
D. Sutton - Inorganic and organometallic chemistry
J. Walkley - Physical chemistry
E.J. Wells - Physical chemistry
S. Wolfe - Organic chemistry

Associate Member
D.H. Boal - Physics

Degrees Offered
The department offers courses leading to the MSc and PhD degrees.

MSc Program

Admission
Refer to the Graduate General Regulations.

Degree Requirements
Course Work
The minimum requirement for the Masters degree consists of 12 semester hours of graduate course credit, including CHEM 801-3 (Student Seminar I) and CHEM 805-4 (MSc Research Seminar). CHEM 805 must be taken at the first opportunity following two semesters registration in the program.

Research
A major part of the Masters degree program will be devoted to original research. A thesis describing this research must be submitted and defended at the conclusion of the degree program.

PhD Program

Admission
Refer to the Graduate General Regulations.

Degree Requirements

Course Work
For students entering with a BSc or equivalent: 20 semester hours of graduate course credit, including CHEM 801-3 (Student Seminar I) and CHEM 802-3 (Student Seminar II) and CHEM 806-4 (PhD Research Seminar). CHEM 806 must be taken at the first opportunity following two semesters registration in the program. CHEM 805 will be accepted in place of CHEM 806 for students who have transferred from the MSc program.

For students entering with a Masters degree: 12 semester hours of graduate course credit, including CHEM 802-3 (Student Seminar II) and CHEM 806-4 (PhD Research Seminar). CHEM 806 must be taken at the first opportunity following two semesters registration in the program.

Research
The major portion of the PhD program will be devoted to original research. A thesis embodying new and significant results must be presented and defended at the conclusion of the degree program.

Transfer from the MSc to the PhD program
In addition to satisfying the University requirements, students wishing to transfer from the MSc program to the PhD program without submitting a Masters thesis will be judged by the Graduate Program Committee on the research reports submitted in CHEM 805.

Biochemistry
Students wishing to undertake graduate studies in biochemistry should refer to the description of the Molecular Biology and Biochemistry Program in the Graduate Studies section.

Chemical Physics
Students who wish to undertake interdisciplinary work in Chemical Physics may apply to the Department of Chemistry or to the Department of Physics. Those who want to work in Chemical Physics under Special Arrangements should refer to the Graduate General Regulations.

Co-operative Education Program
The Department of Chemistry offers a Co-operative Education option in its graduate program in order to allow students to gain work experience outside the academic sphere. Students who are currently enrolled in the department's MSc program may apply for registration in CHEM 881 and 882. This option is only tenable after the completion of an MSc thesis and defense but before formal graduation. Registration in these courses required the approval of the Graduate Program Committee on the evaluation of the Supervisory Committee.

Graduate Courses
CHEM 750-3 Advanced 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 751-3 Advanced Organic Chemistry II

CHEM 752-3 Advanced 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 753-3 Photo-organic Chemistry
Discussion of energy transfer, electron transfer, excited states, photophysics, and mechanistic and synthetic aspects of photochemistry in solution.

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 801-3 Student Seminar I
Discussion of recent literature in chemistry through student seminars.

CHEM 802-3 Student Seminar II
Discussion of recent literature in chemistry through student seminars. Prerequisite: CHEM 801 or Masters Degree.

CHEM 805-4 MSc Research Seminar
Critical evaluation of written and oral research reports.

CHEM 806-4 PhD Research Seminar
Critical evaluation of written and oral research reports. Prerequisite: CHEM 805.

CHEM 811-3 Crystal Structure Analysis I
Point groups, space groups, periodic structures with atoms in general and special positions. The crystal as a 3-dimensional diffraction grating; the Laue conditions; Bragg's Law, Single crystal methods with X-rays. Electron density as the transform of structure amplitudes. Fourier maps. An introduction to the phase problem. Structure refinement and accuracy assessment.

CHEM 812-2 Crystal Structure Analysis II
The phase problem and its solution by direct and vector space techniques. Neutron and electron diffraction. Application of these techniques to problems of the solid state.

CHEM 823-3 Selected Topics of Special Biochemical Interest

CHEM 824-3 Physical Biochemistry
Modern physical methods applied to biomacromolecules; structure of nucleic acids, proteins and membranes.

CHEM 825-3 Bioenergetics
A discussion of the most important processes for biological energy transduction. Structure-function relationships of membrane components and/or other interacting macromolecular systems.

CHEM 832-3 Advanced Inorganic 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 834-3 Recent Advances in Transition Metal Chemistry
Developments in the chemistry of simple and complex transition metal compounds emphasizing current theories of electronic structure, stereochemistry and bonding.
CHEM 835-3 Recent Advances in Organometallic Chemistry
A review of recent progress in this area, including metal alkyls, metal carbonyls and their derivatives, complexes with delocalized ring systems and related compounds.

CHEM 836-3 Special Topics in Inorganic Chemistry I
An advanced, in-depth treatment of a specialized area of inorganic chemistry.

CHEM 837-3 Special Topics in Inorganic Chemistry II
An advanced, in-depth treatment of a specialized area of inorganic chemistry.

CHEM 841-3 Advanced Nuclear Chemistry I
Review of the deuteron and nucleon-nucleon scattering, a study of nuclear models, and a detailed description of the nuclear spectroscopy.

CHEM 842-3 Selected Topics in Radiochemistry
Theory and practical techniques of the current uses of radioactive isotopes in systems of chemical interest.

CHEM 843-3 Advanced Nuclear Chemistry II
A thorough discussion of the theories of nuclear reactions and the mechanism of fission. Additional topics on nuclear models and elementary particles.

CHEM 856-3 Selected 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 semester to the next.

CHEM 860-3 Advanced Physical Chemistry
A review of basic concepts in physical chemistry, spectroscopy and chemical kinetics.

CHEM 861-3 Photochemistry and Chemical Kinetics
Chemical kinetics with emphasis on the reactions of free radicals and excited species. Basic principles of photochemistry and their application. Note: CHEM 861-3 may not be taken for credit by students who have completed CHEM 865.

CHEM 862-3 Macromolecular Chemistry
Physical properties and characterization of macromolecules. Relationship between structure and properties. Kinetics of polymerization. Note: CHEM 862-3 may not be taken for credit by students who have completed CHEM 867.

CHEM 863-3 Magnetic Resonance
Principles, techniques and applications of NMR and ESR.

CHEM 869-3 Selected Topics in Physical Chemistry
A specialized area of physical chemistry will be selected from a list of topics.

CHEM 871-3 Quantum Chemistry
Non-relativistic quantum mechanics. Atomic and molecular structure, perturbation theory, variation method.

CHEM 881-0 Co-op Practicum I
First semester work experience term for graduate students. Prerequisite: completion of MSc thesis including defence.

CHEM 882-0 Co-op Practicum II
Second semester work experience term for graduate students. Prerequisite: completion of MSc thesis including defence.

CHEM 898 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 hours 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 PhD Thesis

**Earth Sciences Program**
Director: M.C. Roberts  
8103 South Science Building  
778.782.4657  
Graduate Program Chair: E.J. Hickin, BA, PhD (Syd), PGeo

A new graduate program leading an MSc in Earth Science will begin in September 1995. Interested students should contact a program advisor.

**Geography Program**
Location: 7123 Classroom Complex  
Telephone: 778.782.3321  
Chair: J.T. Pierce BA (Tor), MA (Wat), PhD (Lond)

*Faculty and Areas of Research*
For a list of areas of research of faculty members, see the Geography undergraduate section. The department takes special interest in the systematic aspects of physical geography; geomorphology, biogeography, soils, climatology, hydrology and spatial information systems. Emphasis is on physical geographical problems of western North America, with particular reference to British Columbia.

Many areas of research occur in co-operation with other departments. Candidates will be encouraged to take courses in biological sciences, chemistry, mathematics and physics, where these are related to their research interests.

*Degrees Offered*
The Department of Geography offers a program leading to the MSc degree in the Faculty of Science.

*Admission*
For admission requirements, refer to Graduate General Regulations.

Students should normally hold a BSc degree, or equivalent, in an honors program with at least a second class standing (3.0 GPA) in Geography or a related discipline. Where the first degree is not in Geography, the student should have at least 12 hours or equivalent in upper division Geography.

Students with a general degree must have 30 semester hours or the equivalent in upper division Geography courses.

*MSc Committee*
The candidate will work under the guidance of a faculty advisor, pending the choice of Supervisory Committee. The Supervisory Committee, normally composed of three faculty members, one of whom may be drawn from outside the department, will be chosen by the second semester.

*MSc Requirements*

*Course Work*
Students must complete a minimum of 12 hours (three one-semester courses) plus GEOG 700 and 701, which are non-credit courses, the grading of which is on a satisfactory/unsatisfactory basis and must take GEOG 706 as part of the 12 credit hours. Students must complete minimum course requirements within the department, and permission must be obtained from the Graduate Studies Committee to complete a minimum course requirement outside the department. Students with deficiencies may be asked to complete more course work.
**Thesis**
A thesis is required. The candidate will submit a written thesis proposal to the Supervisory Committee by the end of the third week of the semester following completion of GEOG 700 and 701. The Supervisory Committee must approve the proposal prior to the start of substantive research. In addition, the candidate is required to present the research proposal to the department at a colloquium prior to the end of the third semester of residence (or by the end of the semester following completion of GEOG 700 and 701). The completed thesis will be judged by the candidate's Examining Committee at an oral defence.

**Graduate Courses**
(See Faculty of Arts - Department of Geography for course descriptions)

GEOG 700-0 Introduction to Graduate Studies: Part I
GEOG 701-0 Introduction to Graduate Studies: Part II
GEOG 706-4 Quantitative Techniques in Physical Geography
GEOG 714-4 Computer Cartography
GEOG 715-4 Geographic Information Systems
GEOG 716-4 Aerial Reconnaissance for Remote Sensing
GEOG 717-4 Digital Processing of Remote Sensing Data
GEOG 720-4 Ecological Biogeography
GEOG 721-4 Biogeography of Wetlands
GEOG 723-4 Climatology
GEOG 724-4 Measurement and Modelling of Heat and Mass Transfer
GEOG 726-4 Fluvial Geomorphology
GEOG 727-4 Field and Analytical Techniques in Geomorphology
GEOG 728-4 Quaternary Geology and Geomorphology
GEOG 730-4 Fossil Landforms
GEOG 791-4 Directed Readings
GEOG 797 MSc Thesis

**Department of Mathematics and Statistics**
Location: TLX 10512 Shrum Science Centre
Telephone: 778.782.3331
Chair: K. Heinrich BMath, PhD (N'cl, NSW)
Graduate Program Chair: G.A.C. Graham BS (Dub), MS (Brown), PhD (Glas)

*Faculty and Areas of Research*
For a complete list of faculty, see Mathematics and Statistics undergraduate section.

B.R. Alspach - Graph theory, discrete mathematics
J.L. Berggren - History of mathematics, algebra
J.M. Borwein - Analysis, computation
P.B. Borwein - Analysis, computation
T.C. Brown - Algebra, combinatorics
A. Das - Applied mathematics
C.B. Dean - Statistics
D.M. Eaves - Statistics
A.R. Freedman - Number theory, analysis, automata theory
H. Gerber - Mathematical logic
L. Goddyn - Combinatorics
G.A.C. Graham - Applied mathematics
K. Heinrich - Combinatorics
P. Hell - Computational discrete mathematics
M.C.A. Kropinski - Applied mathematics
A.H. Lachlan - Mathematical logic
R.A. Lockhart - Statistics
G. Parker - Actuarial Mathematics
E. Pechlaner - Applied mathematics
N.R. Reilly - Algebra
Admission
For admission requirements, refer to the Graduate General Regulations.

Applicants are normally required to submit scores in the aptitude section and an appropriate advanced section of the Graduate Record Examinations of the Educational Testing Service. Applicants whose first language is not English will normally be asked to submit TOEFL results.

Students interested in Applied and Computational Mathematics or Statistics should consult those entries in this Calendar.

Degree Requirements for MSc and PhD

MSc Program
A candidate normally obtains at least 20 credit hours beyond courses taken for the Bachelors degree. Of these, at least 12 are graduate courses or seminars, and the remaining eight may be from graduate courses or seminars or 400 division undergraduate courses. The student must also submit a satisfactory thesis and attends an oral examination based on that thesis and related topics.

Note: MATH 900-990 (see Applied and Computational Mathematics Program) and STAT 800-890 (see Statistics Program) may be used to satisfy requirements for the Master of Science degree.

PhD Program
A candidate will generally obtain at least 28 credit hours beyond courses taken for the Bachelors degree. Of these, at least 16 are graduate courses or seminars and the remaining 12 may be from graduate courses, seminars or 400 level undergraduate courses. Students with an MSc in Mathematics or Statistics are deemed to have earned 12 of the 16 hours and eight of the 12 undergraduate or graduate hours required. The course work in all cases will involve study in at least four different areas of Mathematics and/or Statistics.

Candidates will normally pass a general examination which consists of examinations in three areas. The areas selected for a particular candidate are subject to approval by the Supervisory Committee and the Graduate Studies Committee. In a given area the exams may be written or oral at the option of the Graduate Studies Committee. A candidate ordinarily will not be allowed to take the general examination more than twice. Students will be interviewed and advised regarding appropriate courses and examination curricula.

Students who have completed a Masters degree will normally be required to attempt the general examination within one year of their initial PhD registration.

The Supervisory Committee may require the student to acquire proficiency in reading mathematical papers in either French, German or Russian.

Students must submit and successfully defend a thesis which will embody a significant contribution to mathematical knowledge.

For further information and regulations, refer to the Graduate General Regulations section.
Note: MATH 900-990 (see Applied and Computational Mathematics Program) and STAT 800-890 (see Statistics Program) may be used to satisfy requirements for the PhD.

Co-operative Education Program
The Department of Mathematics and Statistics has introduced Co-operative Education into its graduate program in order to allow students to gain work experience outside the academic sphere. Students who are currently enrolled in one of the department's MSc or PhD programs may apply to the department's Graduate Co-operative Education Committee for admission to this component of the program.

Mathematics Graduate Courses
Note: MATH 603, 604 and 605 are offered as part of the graduate program in Mathematical Education, MSc. These three courses are not available for credit towards the MSc or the PhD degrees in the Faculty of Science.

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. Prerequisites: acceptance into the Masters program in Mathematics Education or permission of the department. Graduate students in Department of Mathematics and Statistics 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. Prerequisites: MATH 601 and acceptance into the Masters program in Mathematics Education or permission of the department. Graduate students in Department of Mathematics and Statistics 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 M.Sc. program in Mathematics Education or permission of the department. Graduate students in the Department of Mathematics and Statistics 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 and Statistics cannot take this course to satisfy their degree requirements.

MATH 605-4 Mathematical Modeling
Introduction to Mathematical modeling using algebraic, geometric techniques along with techniques using calculus. Prerequisite: acceptance into the M.Sc. program in Mathematics Education and one year of university level calculus. Graduate students in the Department of Mathematics and Statistics cannot take this course to satisfy their degree requirements.

MATH 800-4 Pure Mathematics: Selected Topics

MATH 806-4 Mathematical Logic II
First-order theories. Some syntactical theorems concerning provability, such as the equivalence and equality theorems; the completeness theorem and some of its consequences for equivalence of syntactical and semantical notions, and introduction to model theory; incompleteness of formal arithmetic.
MATH 807-4 Mathematical Logic: Selected Topics

MATH 808-4 Mathematical Logic III
Introduction to recursion theory. Church's Thesis, Gödel-Rosser incompleteness theorem, undecidability. Kleene's normal form theorem and enumerations theorem, the recursion theorem. The arithmetic hierarchy, the analytical hierarchy. Degrees of unsolvability. Basic theorems. Additional topics, if time permits. Prerequisite: MATH 806.

MATH 812-4 Algebra I
Theory of fields. Topics covered will include separable, normal, Galois, and transcendental extensions; finite fields and algebraically closed fields. Additional topics may include infinite Galois groups, valuation, Kummer extensions and Galois cohomology, further material in algebraic number theory.

MATH 813-4 Algebra II
Group theory. Generators and relations, normalizers and centralizers, composition series. Permutation groups, Sylow theory, abelian groups. Other topics covered will be the theory of p-groups, nilpotent and solvable groups, and some aspects of simple groups.

MATH 814-4 Algebra: Selected Topics

MATH 815-4 Algebra III
Rings and modules. Commutative and noncommutative associate rings with ascending or descending chain condition. Jacobson radical Chevalley-Jacobson density theorem, Wedderburn-Artin theorems, Goldie theorems, with applications to matrix groups and group algebras. As time permits, homological and local methods.

MATH 816-4 Algebra IV

MATH 820-4 Graph Theory
A first graduate course in graph theory dealing with some of the following: algebraic graph theory, extremal graph theory, coloring problems, applications of graphs, hypergraphs, and current research topics.

MATH 821-4 Combinatorics
An introduction to the theory of block designs, finite geometries and related topics.

MATH 825-4 Enumeration
Enumeration problems concerned with permutations, sequences, partitions, lattice walks and graphs, algebraic and analytic properties of generating functions, asymptotic analysis.

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 Lebesque measure, integration and the Lebesgue convergence theorems together with the treatment of such topics as absolute continuity, the fundamental theorem of calculus, the Lp-spaces, comparison of types of convergence in function spaces, the Baire category theorem.

MATH 832-4 Real Analysis II
This course normally covers abstract measure and integration, and material which collectively might be called an introduction to functional analysis (e.g. complete metric spaces, normal spaces, the Stone-Weierstrass theorem, linear functionals and the Hahn-Banach theorem). Other specialized topics in modern analysis. Prerequisite: MATH 831.
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 837-4 Complex Analysis II
Topics covered will include some of the following: entire functions, normal families, Hilbert space of analytic functions; conformal mappings of special functions; Picard's theorem. Prerequisite: MATH 836.

MATH 839-4 Topology I
A first graduate course in general topology, dealing with some of the following topics: set-theoretic preliminaries, topological spaces, filters and nets, connectedness notions, separation properties, countability properties, compactness properties, paracompactness, metrization, uniform spaces, function spaces.

MATH 840-4 Topology II
A second graduate course in general topology dealing with additional topics among those listed for MATH 839-4. Prerequisite: MATH 839.

MATH 841-4 Topology: Selected Topics

MATH 871-4 Applied Probability Models
Applications of stochastic processes: Queues, inventories, counters, etc. Reliability and life testing. Point processes. Simulation. Prerequisites: MATH 387 or equivalent.

MATH 872-4 Probability I
Fundamental probability concepts and related measure theory; series of independent random variables, the central limit theorem. Introduction to stochastic processes.

MATH 873-4 Probability II
Stochastic processes, construction of probability measures on function spaces. Survey in one or more of the following areas: construction and convergence of probability measures on metric spaces, on spaces of continuous functions, on Hilbert space, on spaces of generalized functions.

MATH 874-4 Probability: Selected Topics

MATH 890-0 Practicum I
First semester of work-experience in the co-operative education program.

MATH 891-0 Practicum II
Second semester of work-experience in the co-operative education program.

MATH 894-2 Reading

MATH 895-4 Reading

MATH 896-2 Introductory Seminar

MATH 897-2 Advanced Seminar

MATH 898 MSc Thesis

MATH 899 PhD Thesis
Molecular Biology and Biochemistry Program
Location: 8166 South Science Building
Telephone: 778.782.5630
Director: B.P. Brandhorst AB (Harv), PhD (Calif)

Faculty and Areas of Research
B.P. Brandhorst - Developmental biology and gene regulation
D.L. Baillie - Developmental Genetics
A.T. Beckenbach - Population genetics, molecular evolution
C.M. Boone - Molecular genetics; cellular signalling
T. J. Borgford - Protein structure and function
R.B. Cornell - Membrane bound enzymes
R.J. Cushley - High field NMR
B.M. Honda - Molecular biology and gene regulation
J.V. Price - Developmental genetics; cellular signalling
W.R. Richards - Protein biochemistry; photosynthesis
J.K. Scott - Immunochemistry, immunology
D. Sen - Nucleic acid biochemistry; chromosome structure
M.J. Smith - Molecular phylogeny and development

Associate Members
A.J. Bennet - Chemistry
A.H. Burr - Biological Sciences
B.J. Crespi - Biological Sciences
L.D. Druehl - Biological Sciences
N.H. Haunerland - Biological Sciences
E. Kafer - Biological Sciences
A. Kermode - Biological Sciences
M.M. Moore - Biological Sciences
B.M. Pinto - Chemistry
A. Plant - Biological Sciences
G.F. Tibbits - Kinesiology

The interdepartmental Molecular Biology and Biochemistry graduate program (MBB) is administered by a steering committee consisting of members of the Institute of Molecular Biology and Biochemistry (IMBB). Members have appointments in the Department of Biological Sciences and the Department of Chemistry. In addition, the IMBB has associate members from these and other departments who may serve as senior supervisors.

Information about the Molecular Biology and Biochemistry program, and the research activities of its faculty, can be obtained from the MBB graduate secretary, Institute of Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, BC. V5A 1S6. Telephone 778.782.5630

Admission
For admission requirements, refer to the Graduate General Regulations. Applicants should normally have completed some advanced course work in biology or biochemistry.

Degree Requirements
All students will be assigned a Graduate Supervisory Committee which has the authority to specify an appropriate program of course work meeting or exceeding the minimum requirements stated below.

All students are expected to attend the IMBB Research Seminar Series and to participate regularly in a journal club.

MSc Program

Course Work
The minimum requirements consist of 12 semester hours of graduate course credits including MBB 801 and 802.
Research
A major part of the MSc program will be devoted to original research. A thesis describing the work must be submitted and defended in accordance with Graduate General Regulations.

PhD Program

Course Work
For students entering with a BSc or equivalent, a minimum of 20 semester hours of credit is required, at least 15 of which must be at the graduate level, including MBB 801, 802 and 806. PhD students must normally enroll in MBB 806 at the earliest opportunity following four semesters of registration in the program. With the approval of their Supervisory Committee, students in the MSc program may apply to the MBB Graduate Program Committee for transfer to the PhD Program.

For students entering the an MSc degree, eight semester hours of credit is required, at least six of which must be at the graduate level, including MBB 802 and 806. The latter course must be taken at the first opportunity following two semesters of registration in the program.

Research
The major portion of the PhD program will be devoted to original research. An original thesis, which contributes to new knowledge, must be presented and defended at the end of the degree program in accordance with the Graduate General Regulations. In addition, all MBB PhD candidates must present a public seminar on their research.

Courses Offered by Other Departments
The following relevant courses are offered by other departments: CHEM 752, 754, and 811.

Graduate Course Work at Other Universities
Upon the recommendation of the Supervisory Committee, and with the approval of the Graduate Program Committee, up to six credits of course work taken elsewhere not resulting in a degree may be applied toward degree requirements, but not exceeding more than half of the credits required in addition to MBB 801, 802 and 806.

Graduate Courses

MBB 801-2 Student Seminar in Molecular Biology and Biochemistry I
Discussion of recent literature through student seminars and written reports. Cannot be taken for credit in addition to CHEM 801.

MBB 802-2 Student Seminar in Molecular Biology and Biochemistry II
Discussion of recent literature through student seminars and written reports. Prerequisite: MBB 801 or an MSc degree. Cannot be taken for credit in addition to CHEM 802.

MBB 806-3 PhD Graduate Research Seminar
Oral presentation and defense 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 Molecular Biology and Biochemistry graduate program. Cannot be taken for credit in addition to CHEM 806.

MBB 811-1, 812-2, 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 821-3 Nucleic Acids
An examination of recent literature about the structure and function of DNA and RNA.

MBB 822-3 Biological Membranes
A review of recent literature on the structure, dynamics, function and biosynthesis of membrane lipids and proteins.
MBB 823-3 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 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 826-3 Molecular Immunology
An overview of cellular and humoral immunology with emphasis on the molecular basis of immune recognition and response.

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. Cannot be taken for credit in addition
of CHEM 828.

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 Genomic 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 836-3 Gene Expression
A consideration of the mechanisms and regulation of gene expression in eukaryotes and prokaryotes.

MBB 837-3 Molecular Genetics of Signal Transduction
Consideration of mechanisms of signal transduction using molecular genetic approaches with emphasis on the yeast
Saccharomyces cerevisiae. Cannot be taken in addition to BISC 861.

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 the instructor.
MBB 871-1, 872-2, 873-3 Directed Readings in Molecular Biology and Biochemistry Programs of directed reading and critical discussions offered by staff members to individual students according to their needs. Study programs must be approved by the MBB Graduate Program Committee.

MBB 898 MSc Thesis

MBB 899 PhD Thesis

Centre for Pest Management
Location: B8255 Shrum Science Centre
Director: Z.K. Punja BSc (Br Col), MSc, PhD (Calif)

The Centre for Pest Management is part of the Department of Biological Sciences and includes faculty with research interests in the area of pest control and analysis. The centre is responsible for a professional degree program leading to the award of the degree of Master of Pest Management (MPM).

Faculty and Areas of Research
For a complete list of faculty, see Department of Biological Sciences undergraduate section.

G.S. Anderson - Forensic, medical and veterinary entomology -
J.H. Borden - Forest entomology
G.J. Gries - Semiochemicals
A.S. Harestad - Wildlife biology
N.H. Haunerland - Insect physiology, biochemistry
J.P.M. Mackauer - Insect parasitology, biological control, systematics
R.A. Nicholson - Pesticide biochemistry, toxicology
Z.K. Punja - Plant biotechnology and pathology
J.E. Rahe - Plant pathology, biochemistry
B.D. Roitberg - Population dynamics
J.M. Webster - Nematology, parasitology
M.L. Winston - Apiculture, social insects

Associate Members
R.C. Brooke - Biological Sciences
R.W. Mathewes - Biological Sciences

Adjunct Professors
P. Belton - BSc (Lond), PhD, ARCS (Glas)
R.W. Baron - BSc, MSc (Manit), PhD (McG)
J.R. Byers - BSA, MSc, PhD (Sask)
G.J.R. Judd - BSc, MPM, PhD (S Fraser)
K.K. Klein - BSA, MSc (Sask), PhD (Purdue)
H.R. MacCarthy - BA (Br Col), PhD (Calif)
R.S. Utkhede - BSc, MSc (Nag), PhD (IARI)
R.S. Vernon - BSc, MPM, PhD (S Fraser)

The Master of Pest Management (MPM) program is a professional degree program offered on a full or part time basis by the Department of Biological Sciences. Established in 1972, the program has graduated students from all over the world.

The program offers comprehensive instruction in theoretical and applied pest biology and management, combining graduate courses with demonstration of traditional and modern methods of pest assessment and control in the field. The program is not committed to any particular approach in pest control, although the need for environmental conservation is emphasized.

As part of the requirements, students must complete a thesis on a specific aspect of pest management which may be based on original field, laboratory or library research and must satisfy University regulations.
The requirements can be completed in three semesters (one year) of full-time study. However, most will require four to six semesters. A minimum of one semester should normally be allowed for a research project based on library work, while field and laboratory research usually takes longer to complete.

This program may also be completed as part-time studies.

**Admission Requirements**
University admission requirements are given in the General Regulations, Graduate section of the Calendar. In addition, the program requires that, for clear admission, the applicant must have completed undergraduate level instruction equivalent to a total of 12 credit hours in ecology, entomology, plant pathology, and chemical pesticides. Applicants who lack some of the prerequisites may be admitted to the program but will be required to make up the deficiencies prior to graduation. Professional experience relevant to pest management can be considered in the case of applicants who do not meet formal admission standards. Normally, the MPM admissions committee will specify the appropriate qualifying conditions, if any, at the time of admission.

**Degree Requirements**
Every MPM program will include the following courses.

**Core Courses**
- BISC 601-5 Urban and Industrial Pest Management
- BISC 602-5 Forest Pest Management
- BISC 603-5 Farm and Specialty Crop Pest Management
- BISC 604-3 Orchard Crop Pest Management
- BISC 605-3 Management of Animal Disease Vectors
- BISC 847-3 Pest Management in Practice
(24 credit hours)

**Elective Courses**
MPM candidates must complete a minimum of four elective 800 level graduate courses from the list given below. Course selection must be approved by the senior supervisor. Up to six credit hours of non-MPM graduate courses may be substituted, subject to prior approval by the student's supervisory committee and the program director.

- BISC 816-3 Biology and Management of Forest Insects
- BISC 817-3 Social Insects
- BISC 841-3 Plant Disease Development and Control
- BISC 842-3 Insect Development and Reproduction
- BISC 843-3 Population Processes
- BISC 844-3 Biological Controls
- BISC 846-3 Insecticide Chemistry and Toxicology
- BISC 848-3 Nematology
- BISC 850-3 Weed Biology and Control
- BISC 851-3 Vertebrate Pests
- BISC 852-3 Medical and Veterinary Entomology
- BISC 884-3 Special Topics in Pest Biology and Management
(12 credit hours)

**Master of Pest Management Thesis**
The thesis (BISC 849) is based on original library, laboratory or field research and must meet the standards specified in the Graduate General Regulations.

**Defence**
An oral examination that includes the candidate's research as well as general aspects of pest biology and management will be given.
Graduate Courses
BISC 601, 602, 603, 604, and 605 are designed for students undertaking the MPM degree. They may be taken for credit for the MSc and/or PhD degree in the Faculty of Science, subject to prior approval by the student's supervisory committee and the program director.

BISC 601-5 Urban and Industrial Pest Management
Pests of foodstuffs and stored products, structural pests, and pests found in and near buildings, ships and aircraft, and their management, with emphasis on insects and rodents.

BISC 602-5 Forest Pest Management
Management of pests and forest regeneration, growing and mature forests, and forest products, and of forest rights-of-way and recreation areas.

BISC 603-5 Farm and Specialty 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 849-0 Master of Pest Management Thesis
A supervised individual analysis in detail and depth of an aspect of pest management and the preparation of a scholarly paper on it.

Department of Physics
Location: P8429 Shrum Science Centre
Telephone: 778.782.4465
Chair: R.F. Frindt BSc (Alta), PhD (Camb), PEng
Graduate Program Chair: J.R. Dahn BSc (Dal), MSc, PhD (Br Col)

Faculty and Areas of Research
For a complete list of faculty, see the Physics undergraduate section.

A.S. Arrott - Magnetism liquid crystals
L.E. Ballentine - Liquid metals, foundations of quantum mechanics
J.L. Bechhoefer - Liquid crystals, dynamical systems
D.H. Boal - Statistical mechanics and surface physics
C. Bolognesi - Semiconductor devices
B.P. Clayman - Far-infrared properties of solids
J.F. Cochran* - Surface impedance of metals, ferromagnetism
K. Colbow - Thin film semiconductors, microsensors and optical properties, biological membranes, photosynthesis
E.D. Crozier - Condensed matter, structure and electronic properties, EXAFS
A.E. Curzon - Electron microscopy, thin films, particles, lubrication, friction and wear
J.R. Dahn - Physics of intercalation, materials for energy storage, electronics structure using synchrotron radiation
R.H. Enns - Nonlinear problems in optics and biophysics
R.F. Frindt - Layered solids, electrical studies, intercalation solids
B. Frisken - Condensed matter
S. Gygax - Superconductivity, low temperature physics
O.F. Hauser - Intermediate energy and particle physics
B. Heinrich - Molecular beam epitaxy, superconductivity, surface physics
D.J. Huntley - Archaeometry, thermoluminescence dating
J.C. Irwin - Optical properties of solids
G. Kirczenow - Condensed matter theory
D. Loss - Condensed matter theory, mesoscopic systems, transport properties of dense quantum fluids
S.R. Morrison* - Physical and chemical properties of semiconductor surfaces, energy storage and conversion
L.H. Palmer - Celestial mechanics, musical acoustics
M. Plischke - Critical phenomena, solid state theory
K.E. Rieckhoff* - Chemical physics, spectroscopy
M.L.W. Thewalt - Semiconductor physics
H.D. Trottier - Phenomenology of strong and weak interactions, field theoretic study of non-Abelian gauge theories
K.S. Viswanathan - Gauge theories of strong interactions and statistical mechanics
S. Watkins - Semiconductor physics
M. Wortis - Solid state theory, statistical mechanics, surface physics

Adjunct Faculty
B.K. Jennings - Theoretical intermediate energy physics
M. Vetterli - Intermediate energy and particle physics
R.M. Woloshyn - Theoretical particle physics, lattice field theory

Associate Members
J.M. D’Auria - Nuclear chemistry
D.E. Nelson - Archaeometric methods, C-14 dating
E.M. Voigt* - Spectroscopy, chemical physics
E.J. Wells - Magnetic resonance

*professor emeritus

**Degrees Offered**
The Department of Physics offers programs leading to the MSc and PhD degrees in Physics.

**MSc Program**

**Admission**
To qualify for admission, a student must have at least second class standing, or equivalent, in honors Physics, honors Mathematics and Physics, Engineering Physics, or Electrical Engineering. See Graduate General Regulations.

**Degree Requirements**

**Course Work**
The minimum requirement consists of 17 semester hours of course credit, of which at least 14 must be at graduate level. Additional undergraduate courses may be required to remedy deficiencies in the student's background.

**Research**
Part of the program is spent doing original research. A thesis describing this research is submitted and defended at the program's conclusion.

**PhD Program**

**Admission**
To qualify for admission, a student must have a Masters degree or the equivalent in Physics. Refer also to the Graduate General Regulations.

**Degree Requirements**

**Course Work**
The minimum course requirement consists of nine semester hours of graduate credit beyond the Masters. Faculty of Science requirements must also be met.
Research
The major portion of the PhD program will be spent in doing 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 Masters Program to the PhD Program
The department does not encourage students to proceed to a PhD without first obtaining an MSc. However, a student may be admitted from an MSc program to a PhD program with a CGPA of at least 3.67 calculated over a minimum of 15 graduate level credits, and the approval of the student's Supervisory Committee, the approval of the Physics Department Graduate Studies Committee, the Department Chair and the Senate Graduate Studies Committee.

Language Requirement
In certain areas of research, familiarity with languages other than English may be important. In such cases a student's Supervisory Committee may require the attainment of reading knowledge of one such language.

Biophysics
Students who wish to undertake interdisciplinary work in Biophysics may apply to the Department of Physics or the Department of Biological Sciences. Those who wish to work in Biophysics under Special Arrangements should refer to the Graduate General Regulations 1.3.4.

Chemical Physics
Students who wish to undertake interdisciplinary work in Chemical Physics may apply to the Department of Physics or to the Department of Chemistry. Those who wish to work in Chemical Physics under Special Arrangements should refer to the Graduate General Regulations 1.3.4.

Graduate Courses

PHYS 801-2 Student Seminar
Discussion of recent developments in Physics, based on student seminars. Attendance is required for all students proceeding toward MSc or PhD degrees in Physics.

PHYS 810-3 Fundamental Quantum Mechanics
Review of foundations of Quantum Mechanics, states and observables, measurement theory, angular momentum, time reversal, stationary and time-dependent perturbation theory, variational methods. Prerequisite: PHYS 415, or equivalent.

PHYS 811-3 Advanced Topics in Quantum Mechanics
A continuation of PHYS 810-3: scattering theory, identical particles, spin statistics, creation and annihilation operators, diagrammatic perturbation theory, Hartree-Fock theory. Prerequisite: PHYS 810, or equivalent.

PHYS 812-3 Relativistic Quantum Mechanics and Elementary Particle
Theory Lorentz group and representations, Dirac and Klein-Gordon Equations, Maxwell's equations and quantization, perturbation theory, Feynman diagrams and rules, strong and weak interactions. Prerequisite: PHYS 811.

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. Prerequisite: PHYS 425, or equivalent.

PHYS 841-3 Equilibrium Statistical Mechanics
Review of ensembles and thermodynamics, ideal gases, imperfect classical gases, classical and modern theories of phase transitions, renormalization group. Prerequisite: PHYS 345, or equivalent.

PHYS 845-3 Nonequilibrium Statistical Physics
Boltzmann equation and applications, H-theorem, conservation laws, Navier-Stokes equation, fluctuation-dissipation theorem, Kubo formalism; systems far from equilibrium, stability theory, stochastic analysis. Prerequisite: PHYS 841.
PHYS 861-3 Introduction to Solid State Physics
Free electron theory, crystal structure, band theory, Bloch's theorem, electron dynamics, phonons, semiconductors. Prerequisites: 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. Prerequisite: PHYS 861.

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.

PHYS 875-3 Advanced Nuclear Physics
Experimental and theoretical treatment of nuclear reactions and nuclear structure: description of nucleon-nucleus and heavy ions reactions; transport equations in reaction studies; properties of nuclear matter under extreme conditions; shell model and interacting boson model of nuclear structure. Prerequisite: PHYS 810 or equivalent.

PHYS 880-3 Applications of Group Theory to Physics
Elements of group theory, matrix representations, the Clebsch-Gordon series, applications of finite and continuous groups to problems in atomic, solid state and elementary particle physics.

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 898 MSc Thesis

PHYS 899 PhD Thesis

Statistics Program
Location: 10512 Shrum Science Centre
Telephone: 778.782.3331
Chair: K. Heinrich BMath, PhD (N'cl NSW)
Graduate Program Chair: G.A.C. Graham BS (Dub), MS (Brown), PhD (Glas)

The program in Statistics is one of the graduate programs offered by the Department of Mathematics and Statistics.

Faculty and Areas of Research
C.B. Dean - Discrete and lifetime data, extra-Poisson variation
D.M. Eaves - Biometrics, generalized linear modelling, theory of inference
R.A. Lockhart - Goodness-of-fit testing, inference on stochastic processes, large sample theory
G. Parker - Actuarial mathematics
R.D. Routledge - Biometrics, estimating the sizes of animal populations
C. Schwarz - Modelling of animal population dynamics, capture-recapture methods
R.R. Sitter - Sample surveys, design of experiments, biostatistics
M.A. Stephens - Goodness-of-fit testing and directional data
T.B. Swartz - Statistical computing, theory of inference
C. Villegas - Bayesian inference
K.L. Weldon - Cross sectional sampling, statistical consulting

Advisors
M. Fankboner BA (Occidental), MSc (S Fraser), TLX10511 Shrum Science Centre
R.A. Lockhart BSc (Br Col), MA, PhD (Calif), TLX 10546 Shrum Science Centre

Statistical Consulting Service 778.782.4670

Admission
For admission requirements, see the Graduate General Regulations section.

Applicants are normally required to submit scores in the aptitude section of the Graduate Record Examinations of the Educational Testing Service. Applicants whose first language is not English will normally be asked to submit 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.

Degree Requirements

MSc Program
The program is intended to give students instruction on a wide range of statistical techniques and also to provide experience in the practical application of statistics. The program should be of interest to students who wish to acquire statistical expertise in preparation for a career in either theoretical or applied statistics.

Students in the program will be required

- to complete at least 28 semester hours of credit for course work in Statistics and related fields beyond courses taken for the Bachelor's degree. Of these 28 hours, at least 20 are to be in graduate courses or graduate seminars, and the remaining 8 may be chosen from graduate or undergraduate seminars or 400 level undergraduate courses. Normally these courses will include STAT 801 and at least four of STAT 802, 803, 804, 805 and MATH 871.
- to complete satisfactorily STAT 811 and 812
- to submit and defend successfully a project (as outlined in the Graduate General Regulations) based on some problem of statistical analysis. This problem will ordinarily arise out of the statistical consulting service. Students with backgrounds in other disciplines, or with an inadequate background in statistics, may be required to take certain undergraduate courses in the department in addition to the above requirements.

PhD Program
A candidate will generally obtain at least 28 credit beyond courses taken for the Bachelors degree. Of these, at least 16 will be graduate courses or seminars and the remaining 12 may be from graduate courses or graduate seminars or 400 level undergraduate courses. Students who hold an MSc in Statistics are deemed to have earned 12 of the 16 graduate hours and eight of the 12 undergraduate or graduate hours required. The course work in all cases will involve study in at least four different areas of Statistics and Probability.

Candidates will normally pass a general examination consisting of three areas. The areas selected for a particular candidate are subject to approval by the Supervisory Committee and the Graduate Studies Committee. In a given area the examinations may be written or oral at the option of the Graduate Studies Committee. A candidate ordinarily will not be allowed to take the general examination more than twice. Students will be interviewed and advised regarding appropriate courses and examination curricula.

Those who have completed a Masters will normally be required to attempt the general examination within one year of initial registration in the PhD program.

A candidate may be required by his/her Supervisory Committee to acquire proficiency in reading statistical papers in either French, German or Russian.
Students will be required to submit and successfully defend a thesis which will embody a significant contribution to statistical knowledge.

For further information and regulations refer to the Graduate General Regulations section.

**Graduate Courses**
See also Department of Mathematics and Statistics, and Applied and Computational Mathematics Program.

**STAT 602-3 Generalized Linear and Non-linear Modelling**
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 330 or permission of instructor. Open only to graduate students in departments other than Mathematics and Statistics.

**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. (5-0-0) 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 Mathematics and Statistics.

**STAT 801-4 Mathematical Statistics**

**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 803-4 Data Analysis**
A problem-based course emphasizing the exploratory aspects of statistical analysis with emphasis on modern computer-oriented methods. Prerequisite: STAT 450 or equivalent or permission of the instructor.

**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. Prerequisites: STAT 330 and 420 or equivalent or permission of the instructor.

**STAT 811-0 Statistical Consulting I**
Students will participate in the department statistical consulting service under the direction of faculty members. This course will be graded on a satisfactory/unsatisfactory basis. Open to MSc and PhD students in Statistics.

**STAT 812-0 Statistical Consulting II**
Students will participate in the department statistical consulting service under the direction of faculty members. This course is graded on a satisfactory/unsatisfactory basis. Open to MSc and PhD students in Statistics.

**STAT 890-4 Statistics: Selected Topics**