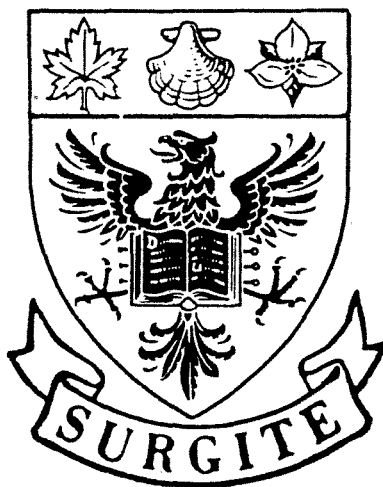




**Brock University**

**Undergraduate Calendar 1993-94**



Brock University

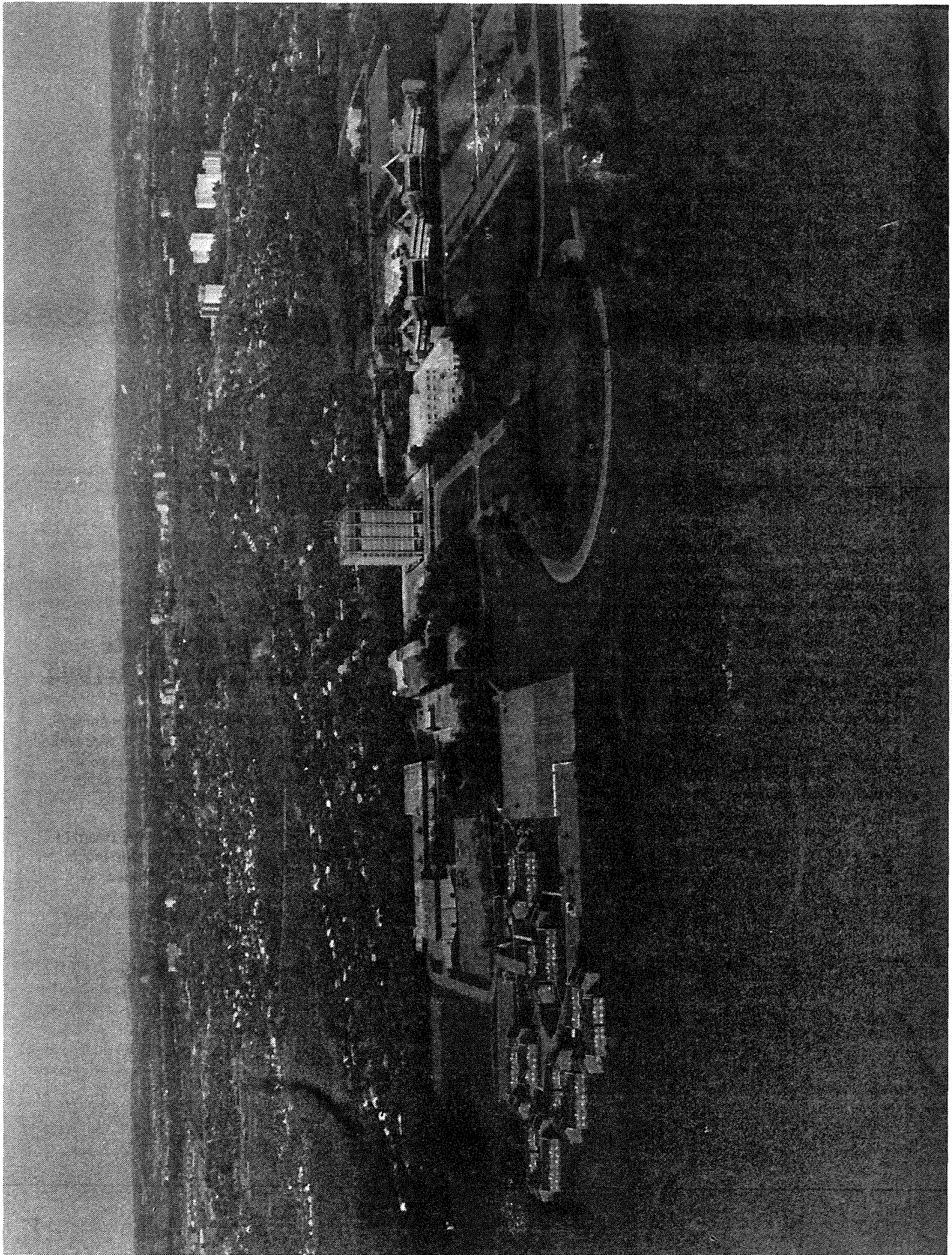
## **The Undergraduate calendar 1993-1994**

The undergraduate calendar contains the current, authorized list of academic programs and courses along with regulations regarding admissions, examinations and promotions.

The University Senate and Board of Trustees reserve the right to make changes without prior notice.

Inquiries and applications should be addressed to:

The Office of the Registrar  
Brock University  
St. Catharines, Ontario  
L2S 3A1.



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# Undergraduate Academic Calendar

An academic timetable giving times and locations for all courses to be offered in any one session (Spring, Summer or Fall/Winter) is available at the Office of the Registrar prior to the beginning of that session.

Please refer to *In-service Education* for information pertaining to dates for this program and to the *Graduate Calendar* for information pertaining to the MA, MSc and MEd programs.

**Note:** All dates refer to undergraduate studies unless otherwise specified.

Winter Term 1993		
Monday	March 1	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for all duration 1 and duration 3 courses. Last day for receipt of application to graduate at Spring Convocation.
Sunday through Sunday	March 14 March 21	Spring break, Faculty of Education, Pre-service Education Program.
Friday	April 2	Last day of classes, Winter Term.
Monday through Wednesday	April 5* April 7	Reading period.
Friday	April 9	Good Friday. University closed; library open.
Thursday through Wednesday	April 8 April 22	Final examinations. No examinations are scheduled for Good Friday, April 9.
Friday	April 30	Last day of classes, Pre-service Education Program.
Spring Session 1993		
Friday	April 23	Last day to apply for admission to part-time studies for Spring Session.
Monday and Tuesday	April 26 April 27	Confirmation of registration and first day of classes. Registrants pick up class timetables and ID cards in accordance with the schedule published in the registration guide.
Monday	April 26	Late registration with payment of \$35.00 late registration fee commences--Spring Session.

\* The extra day in the Winter Term will be used to cover classes missed because of adverse weather (if needed). Otherwise it will be a reading day. The day missed will determine the schedule for classes.

Monday	May 3	Last day for duration 1 and duration 2 course changes with permission of the instructor.
Monday	May 10	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for all duration 2 courses.
Monday	May 24	Victoria Day. University closed; library open. Classes will be held.
Friday and Saturday	May 28 May 29	Progress examinations for duration 1 courses and final examinations for duration 2 courses.
Monday	May 31	First day of classes for duration 3 courses. Last day to apply for admission to full-time studies in the Fall/Winter Session.
Wednesday	June 2	Spring Convocation.
Thursday	June 3	Spring Convocation.
Friday	June 4	Spring Convocation.
Monday	June 7	Last day for duration 3 course changes without permission of the instructor.
Monday	June 14	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for all duration 1 and duration 3 courses.
Wednesday	June 30	Last day to apply for admission to part-time studies for Summer Session.
Thursday	July 1	Canada Day. University closed; library open. Classes will be held.
Friday	July 2	Last day of classes, Spring Session.
Friday and Saturday	July 2 July 3	Final examinations for duration 1 and duration 3 courses.

## Summer Session 1993

Monday	July 5	Confirmation of registration and first day of classes. Registrants pick up class timetables and ID cards in accordance with the schedule published in the registration guide.
Monday	July 5	Late registration with payment of \$35.00 late registration fee commences-- Summer Session.
Friday	July 9	Last day for duration 2 course changes without permission of the instructor.
Monday	July 12	Last day for duration 1 course changes without permission of the instructor.
Wednesday	July 14	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for duration 2 courses.
Friday and Saturday	July 23 July 24	Progress examinations for duration 1 courses and final examinations for duration 2 courses.
Monday	July 26	First day of classes for duration 3 courses.
Friday	July 30	Last day for duration 3 course changes without permission of the instructor.
Monday	August 2	Civic holiday. University closed; library open. Classes will be held.
Tuesday	August 3	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for duration 1 and 3 courses. Last day for receipt of applications to graduate at Fall Convocation. Last day for receipt of applications for admission to part-time studies in Fall/Winter Session in order to ensure processing prior to the normal registration period.
Friday	August 13	Last day of classes, Summer Session.
Friday and Saturday	August 13 August 14	Final examinations for duration 1 and duration 3 courses.

## Fall Term 1993

Monday	September 6	Labor Day. University closed; library closed.
Tuesday through Friday	September 7 September 10	Orientation week for Pre-service Education Program students.
Wednesday through Friday	September 8 September 10	Confirmation of registration. Registrants pick up class timetables and ID cards in accordance with the schedule published in the BIRT registration guide for Fall/Winter full- and part-time studies.
Friday	September 10	Last day to apply for admission to part-time studies for Fall Term entry.
Saturday	September 11	Late registration with payment of \$35.00 late registration fee for duration 1 and duration 2 courses commences.
Monday	September 13	First day of Fall Term classes, day and evening sections, undergraduate programs and Pre-service Education Program.
Friday	September 24	Last day for duration 1 and duration 2 course changes without permission of the instructor. Last day for consideration of entrance and in-course scholarships.
Monday	October 11	Thanksgiving Day. University closed; library closed.
Friday	October 22	Fall Convocation.
Friday	November 12	Last day for withdrawal without the assignment of a grade and last day for change from credit to audit status for duration 2 courses.
Monday	December 6*	Last day of classes, Fall Term, undergraduate programs.
Tuesday	December 7	Snow day/reading day.
Wednesday through Tuesday	December 8 December 21	Progress examinations for duration 1 courses and final examinations for duration 2 courses.

\* The extra day in Fall Term will be used to replace Thanksgiving day classes. The schedule will be that of a Monday.



Wednesday	December 15	Last day of classes, Fall Term, Pre-service Education Program.
Thursday	December 23	Last day to apply for admission to part-time studies for Winter Term entry.
Friday through Sunday	December 24 - (noon) January 2, 1994	Christmas and New Year holiday; University closed.

### Winter Term 1994

Monday	January 3	University re-opens.
Friday	January 7	Emergency examination date (Fall examination period).
Monday	January 10	First day of Winter Term classes undergraduate programs and Pre-service Education Program.
Monday	January 10	Late registration with payment of \$35.00 late registration fee for duration 3 courses commences.
Saturday	January 15	Literacy assessment for part-time students with 2 or more credits and those year 1 full-time students who did not write the assessment in September.
Friday	January 21	Last day for duration 3 course changes without permission of the instructor.
Friday	January 28	Last day for receipt of applications for OSAP (Ontario Student Assistance Program) for Fall/Winter Session.
Sunday through Sunday	February 20 February 27	Reading week. No classes will be held in undergraduate programs.
Friday	February 25	Administrative offices closed; library open.
Tuesday	March 1	Last day for receipt of applications to graduate at Spring Convocation. Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for all duration 1 and duration 3 courses.

Sunday through Sunday	March 13 March 20	Spring break. No classes will be held in the Pre-service Education program.
Friday	April 1	Good Friday. University closed; library open.
Monday	April 11†	Last day of classes, Winter Term, undergraduate programs.
Tuesday through Wednesday	April 12* April 13	Snow day/reading period.
Thursday through Wednesday	April 14 April 27	Final examinations.
Friday	April 29	Last day of classes, Winter Term, Pre-service Education Program. Last day to apply for admission to part-time studies for Spring Session.
Monday and Tuesday	May 2 May 3	Confirmation of registration and first day of classes, Spring Session. Registrants pick up class timetables and ID cards in accordance with the schedule published in the registration procedures guide.

Note: The above dates are subject to change. Please check the academic timetable published before each session. For information regarding graduate studies registration, consult the *Graduate Calendar* or the Office of the Registrar.

†Will be used to replace classes missed due to Good Friday. The schedule will be that of a Friday.

\*The extra day in Winter Term will be used to cover classes missed because of adverse weather (if needed). Otherwise, it will be a reading day. The day of the week missed will determine the replacement schedule for classes.

**Note:**

The above dates are subject to change. Please check the academic timetable published before each session. For information regarding graduate studies registration, consult the *Graduate Calendar* or the Office of the Registrar.

# Mission Statement

## A. ACADEMIC FOCUS AND ENVIRONMENT

*It is the mission of Brock University:*

1. to provide a broadly-based liberal undergraduate education in the arts and sciences and in professional and interdisciplinary programs and to offer graduate studies in selected disciplines.
2. to maintain excellence in teaching, scholarship and other creative activity as interconnected components of the University's responsibility.
3. to permit carefully planned growth in student enrolments and academic programs provided that sufficient additional resources are available to the University for such growth and that any increase in the size of the University does not diminish those qualities that identify Brock's unique character. These include:
  - an emphasis on small classes and small-group learning in seminars, laboratories and studios to facilitate intellectual excitement, improved learning and academic interaction among students and between students, faculty and staff;
  - an open and accessible administration;
  - a unity of purpose among faculty and staff;
  - an atmosphere in which all members of the Brock community are treated with respect and valued as individuals.
4. to provide, through the conduct of the faculty, students and staff, and through its policies and administration, an atmosphere free from sexism, racism and all other forms of stereotyping, harassment and discrimination.
5. to provide academic programs and a learning environment of the highest quality to attract academically qualified and gifted students.
6. to enhance existing programs while developing additional innovative and relevant programs, at both the undergraduate and graduate level for full-time and part-time students.
7. to develop the library, computing and other resources to support research, creative activity and learning.
8. to develop a campus with the academic space, facilities and amenities, both indoor and outdoor, conducive to effective learning and scholarship.

## B. STUDENTS

*It is the mission of Brock University:*

1. to prepare students for advanced study, career success, community responsibility and a richer life by developing a passion for life-long learning and the abilities to think creatively and critically, to communicate clearly, to maintain high ethical standards, to exercise sound judgment and to address societal and environmental issues.
2. to foster an environment for students which encourages not only intellectual growth but also physical, social and spiritual well-being through a diversity of extracurricular activities and experiences designed to enrich their lives, develop their talents and provide opportunities to discover and pursue new interests.
3. to facilitate accessibility for lower-income students, mature students, part-time students, students from visible minority groups, Canadian Native Peoples, international students, students with unrealized potential and students with disabilities.
4. to foster a continuing commitment to the University among graduates.

## C. UNIVERSITY PERSONNEL

*It is the mission of Brock University:*

1. to support, encourage and nurture faculty and staff in their pursuit of personal growth and professional development, recognizing that male and female career patterns may differ.
2. to encourage wide-spread participation of faculty and staff in policy formation.
3. to implement fair and progressive employment policies for all University personnel.
4. to achieve equality in the representation of women and men in both academic and non-academic positions.
5. to increase the number of people from visible minority groups, Canadian Native Peoples and those with disabilities, in both academic and non-academic positions.

6. to encourage and recognize the achievements and contributions of staff members to the service of students and the aims of the University.
7. to encourage and support faculty members in their pursuit of excellence in undergraduate and graduate teaching and in research and other creative activity in their various fields.

#### **D. THE COMMUNITY**

*It is the mission of Brock University:*

1. to serve as a learning, cultural, artistic and recreational centre and co-operatively address regional issues.
2. to welcome and support international students and faculty and to encourage exchange programs and collaboration with universities in other countries in order to promote international understanding and cooperation.
3. to serve the Niagara, Canadian and international communities by providing leadership and consultation on societal issues and concerns.

## General Information

For more than twenty-five years Brock has welcomed and encouraged students in their pursuit of further knowledge. Over the years, challenge and enthusiasm are words that have been used many times in discussing the founders, faculty and staff and students.

Scholarship is both encouraged and acknowledged. The University takes pride in commending those students who have been named to the Deans' Honors lists and those who have been given other scholastic awards. Their names appear in the section of this calendar devoted to scholarships, awards and financial assistance (page 291).

While not all students can appear on the special honors lists, they can all benefit from the opportunity for intellectual and personal growth. Starting in year 1 emphasis is placed on individual participation by means of small group meetings in a seminar, laboratory or tutorial setting in addition to the more formal lectures.

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### Location

Brock University is located on the Merrittville Highway at St. David's Road (atop the Niagara Escarpment) at the southern city limits of St. Catharines. Regional, city and University maps are printed at the back of this book.

The Office of the Registrar is in Room 301 of the Schmon Tower and is open 8:30 a.m. to 6:00 p.m. (from 4:30 p.m. to 6:00 p.m. for picking up and dropping off forms or general questions only), Monday to Thursday during the Fall/Winter and Spring Session and 8:30 a.m. - 4:30 p.m. on Friday and during the Summer Session. Office hours are extended to 7:00 p.m. during the first two weeks of the Fall and Winter Term and for the first week of the Spring Session.

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### Affiliated college

Concordia Lutheran Theological Seminary, an affiliated college of the University, prepares students for the Master of Divinity (four-year program) and Master of Theological Studies (two-year program) degrees. All degrees are granted by the University. The seminary is operated by The Lutheran Church - Canada and is an Associate Member of the Association of Theological Schools in the United States and Canada.

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### The calendar

The Brock Undergraduate Calendar contains information about the University facilities and academic structure.

The following summary might be useful to prospective students.

In order to attend classes, one must apply for admission either through the Ontario University Application Centre for enrolment in 3.5 or more credits during a Fall/Winter Session or directly to Brock for fewer than 3.5 credits. Early application is encouraged so that admission can be granted prior to registration; there is an additional fee for late registration. Application procedures and assessments are outlined on page 22.

Certain rules apply to all students and to all programs. These are shown in the section called Academic Programs and Regulations, page 31. See the Glossary on page 29 for an explanation of the terminology used at Brock.

In addition to the general rules, there are departmental regulations which pertain to their single or combined major programs. Details are given in the various departmental segments of the Calendar which are arranged alphabetically starting on page 41.

A General Studies or Integrated Studies program can be developed in consultation with the appropriate dean if a single or combined major cannot include all of

a student's anticipated courses.

Descriptions are given for all of the courses in the Brock course bank. The selection of courses to be offered in any session will be listed in the class timetable which is published prior to registration.

Information about fees and financial assistance (including scholarships) can be found on pages 27 and 291 respectively.

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### Team spirit

Extra-curricular activities should be included in the university experience. Brock has facilities for sports (individual and team) as well as special interest clubs that allow students to be participants not merely spectators. Sir Isaac Brock, our namesake, provided active leadership for his troops in the War of 1812. The University could do no less for its students today. His motto, *Surgite* (push on), is ours.

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### Campus tours

Campus tours are available weekdays throughout the academic year at 10:30 a.m. and 2:30 p.m. or at other times by arrangement. During the summer months, tours are available at 10:00 a.m. and 2:00 p.m.

Prospective students are encouraged to make arrangements ahead of time so that appointments can be made for them to speak with professors in their areas of interest or, perhaps, to sit in on a class.

To arrange a tour, call the Office of External Relations  
Brock University,  
St. Catharines, Ontario  
L2S 3A1  
(416) 688-5550, ext. 3245  
(After October 1993: (905) 688-5550, ext. 3245.)

## Life at Brock

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### Student organizations

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#### Brock University Students' Union

All registered students are members of the Brock University Students' Union (BUSU). Each spring, union members elect a president to preside over BUSU and the students' administrative council (BUSAC), comprised of student representatives from each department in the University, the Faculty of Education, Concordia Lutheran Seminary and the residences including a representative for off-campus and part-time students.

BUSAC acts as a political lobby and a social organizer and it is responsible for managing the affairs of the union and implementing policies or the students of the University.

Through student fees, BUSU sponsors and supports such programs as orientation week, the General Brock and Sophie's store, the Gender Issues office, the Ombuds officer, the *Brock Press*, a computerized used book sale, the 'Foot Patrol', as well as providing all the entertainment for Isaac's. BUSU also sponsors over 40 clubs a year, all of which are open for membership to all Brock students.

Students also participate in University policy making by electing four representatives to sit on Senate and three to sit on the Board of Trustees. Election of these representatives coincides with the presidential election in the spring of each year or as required by vacancy.

The BUSU office is located on the second floor of the Alumni Student Centre.

#### Ombuds officer

There may be occasions which cause students to feel victims of unfair treatment. For guidance in both academic and personal matters, students can contact the ombuds officer.

For assistance in getting through red tape, injustice, conflict and harassment, although not a lawyer, the ombuds officer has access to expert legal advice, should it be necessary. It is important that all students become familiar with their academic rights and responsibilities. Read the regulations found later in this calendar.

Election for the ombuds officer coincides with BUSU presidential elections in the spring of each year. The ombuds officer is located in the BUSU office.

#### The Brock University Students Centre

This is the second year of operation for the new student centre. This building is funded and operated solely by students. It contains a store, the BUSU offices, an on-campus typing service, the office of the ombuds officer, the Gender Issues Resource Centre, Issac's pub and a photocopy service.

This building is a milestone in Brock's history. It was built by and is maintained by students.

#### Ontario Public Interest Research Group (OPIRG - Brock)

OPIRG is a body funded by student fees that provides an outlet for Brock students to actively work on a variety of environmental, social justice and health issues. Through research, education and action, students will gain insight into the interrelationships between different social issues, while improving their skills and providing valuable information in the community.

All students are invited to participate in the activities of OPIRG. Students who do not wish to support the work of OPIRG are encouraged to get a refund of their student fees from the OPIRG office, located in room 306 of the Student Centre.

#### Alumni association

With your graduation comes a new relationship with the University. You will have joined the more than 24,000 members of Brock's Alumni Association. Full membership privileges (including special membership prices at the Physical

Education Complex and the Brock Centre for the Arts and borrowing privileges from The Library) are available to anyone who holds a degree or certificate from the University.

The mission of the Brock University Alumni Association is to foster a spirit of loyalty to the University among the alumni; to support the University by promoting its welfare and advancing its interest and influence; to maintain and promote unity and a spirit of friendship among graduates; to raise funds on behalf of the University; and to maintain a fund or funds to apply the interests from this for charitable purposes including making awards to individuals or organizations within the University to assist in the promotion of education, arts and recreation. Brock's Annual Giving Program is supported by graduates through the TeleGrad Program. All graduates are contacted annually and the 1992 campaign goal for alumni is \$1,150,000. These funds will be used to meet priority needs across the campus.

Members of the association are kept informed of University affairs and of graduates' activities through *Surgite!*, published four times a year. Regional chapters have been established in such diverse areas as Calgary and Hong Kong. The association also provides support for the Brock Student Ambassadors, who provide programs such as exam-time survival kits and "Touch of Home" packages to help put alumni in touch with the current student body--their future members.

Each year, the association presents a number of awards. The \$500 Alumni Award is given to a third- or fourth-year student who has contributed to the extra-curricular life of the University while maintaining a satisfactory grade average. The Jim Gayman Bursary, established in 1981, is awarded to a residence student and the Alumni Award for Excellence in Teaching is presented to an outstanding faculty member. In addition, the alumni association awarded scholarships to 41 students in 1992 for academic excellence.

For information about the Alumni Association or any of its programs, contact the Alumni Office, The 263, (416) 688-5550, ext. 3251. (After October, 1993: (905) 688-5550, ext. 3251.)

## Life at Brock

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### Development office

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Michelle Gardner, Manager  
*Thistle east 263*

The development office co-ordinates all fund-raising programs and projects undertaken by the University. All donations are eligible for an income tax credit, and an official receipt will be issued promptly. The development office maintains a list of companies which will match your donation.

You can perpetuate your interest in the University through a bequest that will benefit future generations of students. A bequest is expressed through your will by simply stating that Brock University is to receive a certain sum of money, a specified piece of property (art, books, life insurance, real estate), a stated percentage of your estate, or residual interest in your estate after other responsibilities have been met.

In these times of dwindling tax monies, the contributions of individuals have never been more necessary. Enormous increases in registrations have placed great pressure on every facility and program in the University, and the need for additional support is a necessary part of meeting operating cost. There is a serious need for modernization, expansion, and updating of many of the University's facilities and equipment.

The development office welcomes the opportunity to consult with you on how you can help us through a contribution. Through the University's Donor Recognition policy, your contribution will be suitably recognized.

For further information, please call or write:

Development Office, Brock University  
St. Catharines, Ontario L2S 3A1.

Telephone (416) 688-5550 ext. 4320  
(After October 1993: (905) 688-5550,  
ext. 4320.)

Charitable Registration Number  
0053413-20-16

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### Smoking policy

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Smoking is permitted only in designated areas of Brock University.

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### Policy affecting student life

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The University has policies which affect student life at Brock. It is important that each student be familiar with these policies and their associated procedures. In addition to extracts published in the Undergraduate Calendar, there are separate publications that deal with *Student Rights and Responsibilities* in academic matters, *Student Conduct Code in Non-Academic Matters*, the *Appeal Process in Non-Academic Matters* and the *Sexual Harrassment Policy*. Copies of these publications are distributed at Confirmation of Registration and are available at the Office of the Registrar and the Office of the Dean of Student Affairs.

## Facilities and Services

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### University Library

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The University Library is housed on seven floors of the Schmon Tower, the focal point of the campus. Its collections, numbering 900,000 items, have been selected to support the teaching and research programs of the University. All students have access to the collections. Individual study and specialized seating is available for 900 readers. The Library is open, including evenings and weekends, for 94 hours each week; hours are extended during exam periods.

The Library maintains a number of separate collections. The Reserve Collection contains heavy-demand books and articles which are required course reading. The Documents Collection contains official publications of all levels of government and of international organizations. The Niagara Regional Collection contains materials published about or in the Niagara Region. The Sound and Video Collection contains 9,000 recordings of music, plays, documentaries and lectures and a growing collection of instructional and cultural videos. Players for records, compact discs and cassette tapes are provided, plus two viewing stations for videos.

Access to the collections is available through CD-ROM (SearchMe) and on-line (GEAC) catalogues with computer terminals on each floor of the Library. These catalogues provide detailed information on the books, journals, documents, atlases and recordings held in the University Library and Map Library and the material located in the Instructional Resource Centre (see below).

The on-line circulation system provides a speedy control process and an efficient recall procedure for books requested by individual borrowers. In order to borrow materials, students must register with the library and must present a valid University ID card.

Items not available in the library collections may be requested from other libraries through the Interlibrary Loan Service. Brock students may borrow in person, through a reciprocal agreement, from the libraries of all other Ontario universities (except the University of Toronto).

Experienced librarians are available to assist in the use of the collections at a central reference-information desk. They also provide a computer search service, a quick and efficient method of searching indexes and abstracts in over 300 data bases. Free access to a growing number of data bases on compact discs is available. Individual and group orientation tours are provided; individual term paper research assistance, bibliographic instruction and subject-related seminars are scheduled on request.

The Library is wheelchair accessible. Specialized equipment is provided for the use of special needs students who may apply for the use of the individual closed-study carrels. The Library can also provide access to talking book material. Further information is available at the reference - information desk.

Debit card and coin-operated photocopy machines are located throughout the Library. Equipment is available for reading and for making paper copies from, microforms.

More detailed information on Library collections, services and hours can be found in a series of printed guides available in the Library.

### University Map Library

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The Map Library, administered by the University Library, is located in the Mackenzie Chown Complex, Room C306. It contains 50,000 map sheets, including a complete set of Canadian federal topographic maps and numerous special-purpose maps, 700 atlases and 15,000 aerial photographs of the Niagara Region dating from 1921. The Map Library is equipped with terminals for accessing the on-line and CD-ROM cata-

logue, a light table, stereoscopes and a photocopier with enlargement and reduction features.

The Map Library resources and facilities are available to the general public for reference purposes.

### Instructional Resource Centre

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Located in the Faculty of Education, this Centre contains selected print and audio-visual materials related to educational studies. There is a work area for the production of classroom audio-visual aids. Although geared to the specialized needs of Education students, the materials and facilities are available to all students.

### Computing services

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The University's Computing Centre, which services both the academic and administrative needs of the University, is located in section F of the Mackenzie Chown complex. It houses two Unisys A6 devices which are accessed via terminals located in various offices throughout the University. There are also two large Silicon Graphics UNIX servers installed to support academic teaching and research. These academic machines are networked to various micro labs and departmental work stations on campus.

The computing facilities are available to faculty, staff and students. Students requiring the use of the UNIX servers for their courses can be supplied with a usercode by their instructor.

The academic systems support standard programming languages such as FORTRAN 77 and C, together with a number of application packages which include SAS, SPSS, IMSL, TECPLOT and MATHEMATICA.

The University supports four micro labs for general purpose academic use. The facilities are located in Rooms A203, A204, F316 and F317. One lab has thirty



## Facilities and Services

Macintosh SE devices installed in room A204 and connected via MacJanet and other networking software. Another lab in room A203 supports the MS-DOS operating system on forty-five 386 color microcomputers networked with Novell software. Room F316 contains twenty-four Macintosh LC color micros and F317 has another MS-DOS lab with twenty 386 PC's installed with color monitors.

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### Athletics and campus recreation

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Programs and facilities are designed to involve as many members of the University community as possible--as participants and as fans. Recreational, instructional, intramural and intercollegiate activities revolve around the physical education centre. Facilities include two gymnasias, combatives room, fencing/dancing studio, strength and fitness centre, five squash courts, one handball/racquetball court and a 50-metre eight-lane swimming pool. Classrooms, *Badger Shop* (clothing store), snack concession and offices are also included.

Four outdoor all-weather tennis courts and numerous fields compliment the indoor facilities.

As the largest assembly area on campus, the centre is also used for social events, examinations and convocation.

### Campus recreation

The Campus Recreation program offers a wide range of recreational and competitive and instructional activities for all levels of ability. The aim of the program is to provide an opportunity for physical activity through competitive leagues, recreational leagues, clubs and instructional programs that can enrich campus life.

*Recreation:* For those who prefer not to participate in structured programs, squash, racquetball and tennis courts may be booked in advance; other facilities are available as posted. Recreational programs are designed for fun with minimal focus on competition.

*Competition:* Team and individual physical activities are offered on a scheduled basis, with officials, league standings and play-offs. Men's, women's and co-ed programs are offered. Leagues include slowpitch, flag football, ball hockey, ice hockey, basketball, volleyball and badminton.

*Instruction:* If you want to be introduced to a new activity or want to improve existing skills, join one of the instructional programs. Courses are offered in ballroom dance, fitness, squash, tennis, racquetball, strength training, tennis and women's self-defence. Certification programs including CPR, first aid, fitness leadership, sports injury care and national coaching certification are available.

### Intercollegiate athletics

As a member of the Ontario Women's Intercollegiate Athletic Association (OWIAA), Brock teams compete with other universities in basketball, fencing, rowing, volleyball, cross-country running, soccer, curling, waterpolo and swimming.

As a member of the Ontario Universities Athletic Association (OUAA), the men's teams compete in basketball, cross-country running, curling, fencing, hockey, rowing, rugby, soccer, golf, tennis, volleyball, swimming and wrestling.

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### Bookstore

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#### *Thistle South, 219*

The Brock Bookstore is the primary source of required textbooks and recommended reading materials. It also stocks stationery, magazines, a wide range of other reading material, computer hardware, software and computing supplies, clothing and memorabilia.

Bookstore hours: Fall/Winter session: Monday - Thursday 9 a.m. to 7 p.m., Friday to 4:30 p.m.; July and August: Monday - Friday 10 a.m. to 4:30 p.m.

## A USER'S GUIDE TO THE ADMISSIONS' AND REGISTRAR'S OFFICE

Ronald W. McGraw <i>Director of Admissions and Protocol</i> Schmon Tower, 300	Lois Baldwin <i>Secretary to the Director of Admissions and Protocol</i> (ext. 3429)
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<b>Academic Advising</b> For appointments call ext. 3430.	Gail Clark, <i>Supervisor</i> (ext. 3443)  <b>Advisers</b> Debbie Boutilier (ext. 4262) Kevin Kiss (ext. 4031)
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<b>Admissions</b> Keith Rae, <i>Associate Director</i>  <i>In-Service Education</i> <i>Pre-Service Education</i> <i>Transcript and admission evaluation</i> <i>International students</i> <i>Part-time, mature, CAAT and transfer student</i>  <i>High school applicants</i>	Pat Konkle <i>Secretary to the Associate Director</i> (ext. 3565)  Beulah Alexander (ext. 3158) Sandy Bolibruck (ext. 3562) Dorothy Gann (ext. 3435) Keith Rae (ext. 3566) Debbie Shepherd (ext. 3745) Eleanor Snider (ext. 3431) Mika Vervoort (ext. 3434)
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<b>Scholarships and Bursaries</b>	Kevin Kiss (ext. 4031)
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Louis R. Ariano <i>Registrar</i> Schmon Tower 300	Linda Rynberk <i>Secretary to the Registrar</i> (ext. 3550)
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<b>Appeals</b>	L. Ainsley Towe (ext. 3444) <i>Associate Registrar</i>
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<b>Graduate Studies</b>	L. Ainsley Towe Ellie Koop (ext. 3239)
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<b>Letters of Permission</b>	Anne Beresford (ext. 3744)
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<b>Publications</b>	Diane Uppal (ext. 3249)
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<b>Records</b>  <i>Records information and BIRT registration help lines:</i>	Mary Berg, <i>Supervisor</i> (ext. 3442)  Rita Barr (ext. 4373) Linda Buys (ext. 3438) Josephine Callaghan (ext. 4374) Geraldine D'Amore (ext. 3438) Jeanette Davis (ext. 3439)
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<b>Scheduling</b>  <i>Non-conference room reservations</i> <i>BIRT catalogue numbers</i>	Pat Cane, <i>Scheduling Officer</i>  Debbie Black (ext. 3436) Terry Hannigan (ext. 3194)
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<b>Transcripts</b>	Agatha Gossen (ext. 4275) Joan Woolston (ext. 3536)
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# Student Services

Office of the Dean, Student Affairs  
David L. Jordan, Dean  
*Decew Residence, 214*

The Dean of Student Affairs works to make your life as a student better. He develops and promotes policies and programs to address these concerns, to improve the quality of student life at Brock, and to increase students' appreciation of the academic experience.

The dean chairs the Vice-President Academic's Advisory Committee on Student Affairs, a joint committee of students, staff and faculty. As well, the dean chairs the Advisory Committee on Race Relations. Students who are interested in the work of the committee may volunteer through the Office of the Dean of Student Affairs.

The dean is available to assist both individuals and groups of students with whatever concerns they may have. Students may bring their ideas and problems to the dean. If it is not possible to see the dean immediately, the secretary will arrange an appointment.

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## Counselling Centre

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Cathie Closs, Co-Director  
(Personal Counselling and Career Placement Services)  
*Schmon Tower, 411, extension 3240*  
Joan McCurdy-Myers, Co-Director  
(Learning Skills and Special Needs)  
*Schmon Tower, 409, extension 3242*

The Counselling Centre provides a variety of psychological and educational services designed to help students take full advantage of their university experiences.

The Counselling Centre is comprised of:

- Career/Placement services
- Learning skills
- Personal counselling
- Special needs

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## Career/Placement services

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Cindy Nogradi, Co-ordinator  
*Schmon Tower, 411*

The Counselling Centre offers a variety of career services to help you with your career planning and job search. Take advantage of our career drop-in service by bringing your questions to a career assistant anytime between 8:30 a.m. and 4:30 p.m. Attend an information session on cover letters, interview techniques or résumé writing. Use the career resource library to investigate occupations, employers, educational institutions or volunteer opportunities. Most services are free.

When you're looking for a part-time job to help you through the school year or if you're ready to launch your career after graduation, come and see us. Career/Placement Services keep up-to-date listings of jobs available on a permanent, part-time or summer basis. Graduating students should ask about the on-campus recruiting and graduate workshops. Our career/placement staff can help you get started on the ladder to success.

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## Learning Skills programs

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Janet Johnston, Co-ordinator  
*Schmon Tower, 409*  
*extension 3242*

The Learning Skills office is designed to help you find the learning strategies you need to demonstrate your true potential when faced with academic challenges. Workshops are offered at a nominal cost to address your needs in study skills, reading, essay writing, as well as relaxation techniques. In addition, learning skills instructors are available for individual appointments to address your specific learning skills needs.

The Learning Skills office also works in co-operation with the Special Needs office in order to provide assistance to students with learning disabilities.

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## Personal counselling

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Les McCurdy-Myers, Co-ordinator  
*Schmon Tower, 411*

Why do students enter counselling?

Many seek help with specific concerns about relationships, self-confidence, loneliness, stress, sexuality or academic difficulties. Others bring less clearly defined problems such as low motivation or a feeling that things just are not right. Through individual and/or group counselling, many students not only resolve their immediate concerns but learn useful skills for dealing with future issues as well.

If something is bothering you and it is interfering with your studies, there is someone who can help. Counsellor/therapists offer confidential professional counselling, at no cost to you. Just call or drop in to set up an appointment. A limited number of evening appointments can be arranged for students who work full-time (at paid work or in the home) during the day.

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## Special Needs

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Susan Wheeler, Co-ordinator  
*Schmon Tower, 409*  
*extension 3242*

A special needs student is any student who is academically inconvenienced because of physical or learning disabilities. Brock encourages and supports the educational aspirations and participation of these students. Brock's special Needs office is a relatively new service, housed within the Counselling Centre, which provides direct services and advocates for reasonable accommodations to special needs.

Students are advised to contact the Special Needs co-ordinator as early as possible in their application to Brock in order to determine if appropriate services are available to accommodate their specific needs.

Most facilities at the University are wheelchair accessible; however, an initial orientation, available through the Special Needs co-ordinator, outlines specific access routes to buildings, classrooms and parking. There are six wheelchair accessible housing units on-campus in the Village residence.

Direct services such as note takers, alternate examinations and some individual learnings skills assistance are co-ordinated by Ms. Wheeler. The Special Needs Resource Area offers assistance and individualized training in use of regular and specialized computers and other technical aids to assist students with a variety of impairments.

The Library has designated a reference librarian, Doug Suarez, to co-ordinate library services for Special Needs students. These include obtaining books on tape, assisting with computer searching and locating books in the collection.

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### Financial aid

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Ann Stavina, Administrator  
*Thistle North, 260*

For OSAP inquiries or advice about financial problems or concerns, the people in the Financial Aid Office can help. They can guide you through the paperwork, and let you know how you can qualify for Canada Student Loans, Ontario Student Loans, Ontario Special Bursary Plans, Ontario Work/Study Plans and Ontario Graduate Scholarships.

Applications and information about assistance for full- and part-time students are available from the Financial Aid Office which is open Monday through Friday 10:00 a.m. to 4:00 p.m. (Tuesdays 10:00 a.m. to 7:00 p.m. during the Fall/Winter session).

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### Campus ministries

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*DeCew Residence, 201 and 202*

Rev. George Tattrie (Protestant Ecumenical Chaplain)  
Sister Joan Quinn, CSC (Roman Catholic Ecumenical Chaplaincy)  
Leny Holierhoek, Co-ordinator, Justice and Peace Programs (R.C.)  
Rev. Nick Overduin (Christian Reformed Ecumenical Chaplain)

Campus Ministries believes that spiritual development is an integral part of the university experience and provides people oriented ecumenical worship, spiritual direction, pastoral counselling, workshops, seminars, study groups and public lectures.

The chaplains are appointed by several religious denominations and are available to discuss any topic with you, particularly concerning spiritual and ethical aspects of your life.

Anyone who wishes to be a part of a faith community; to share concerns and/or experiences; to speak in confidence about any matter, is welcome to contact any of the on-campus chaplains.

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### Residences

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James R. Fleming, Director of Residences and Conference Services  
*DeCew Residence, 205*

The Housing Office is in charge of Brock's three residences: DeCew, a traditional style on-campus residence with all-male, all-female and co-ed accommodations and self-contained cafeteria; Queenston, an off-campus traditional style residence, with alternate male and female floors and a meal plan; or the Village, that combines the independence of townhouse living with the convenience of an on-campus location.

All residence rooms provide the basic necessities and all residences provide

opportunities for residents' input through the Residence Action Committee or the Residence Life Staff.

Students who indicate an interest in residence on their OUAC form will be sent an application for residence along with the University's offer of admission.

In addition, the housing office staff posts listings of available rooms, apartments and houses for those looking for off-campus accommodations. A package that contains everything you need to make the search a little easier, from a list of average rents to a guide to the Landlord/Tenant Act, is also available.

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### International services

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John Kaethler, Co-ordinator  
*DeCew Residence, Basement 211*

"Every student is an international student", according to John Kaethler, Co-ordinator of International Services.

**International Student Advising:**  
International students may find it helpful to discuss academic or personal problems with the co-ordinator. He can offer assistance with such things as immigration, health, banking, accommodation and the completion of various forms, as well as providing liaison with instructors, the University administration and the community at large. It would be useful to see him when you arrive at Brock.

**Host Family Program:**  
The office of International Services, in conjunction with the St. Catharines University Women's Club, offers international students a Host Family Program. This is not an accommodation service, but an opportunity for international students to meet informally with Canadian families.

**Peer Partner Program:**  
The office offers this program to new international students at Brock. Each international student is matched with an international or Canadian student who is familiar with Brock and Canada. Each

## Student Services

peer partner can help international students to adjust to life at Brock.

International Study, Employment and Development:

The co-ordinator also assists Canadian students interested in studying or working in other countries. He co-ordinates an exchange program to the United States, Korea and to Great Britain. He is also responsible for international development activities on campus.

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### Health services

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Melodie Shick-Porter, Nurse  
*Thistle East, 261*

Don't feel you have to wait for a problem to arise to visit the Health Services.

A team of nurses and physicians provide comprehensive medical/clinical services as well as health education and counselling. We can help you with a medical problem, provide treatment or a referral, give allergy injections or update your immunization. We can provide health education and counselling with regards to issues such as contraception, pregnancy, sexually transmitted diseases, nutritional or weight concerns, stress or lifestyle issues.

Your visit and treatment is strictly confidential. The health fee you paid with registration covers health services and a special student insurance plan which also helps cover prescription medication and accident expenses such as dental injuries. OHIP or Health Insurance is needed in order to be seen by a physician but not by the nurse.

If you have any questions or require any additional information about a health issue or specific health concern, feel free to drop in - our hours are 8:30 a.m. - 4:00 p.m. Monday through Friday, September through April, or telephone extension 3243.

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### Day care centre

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Jane Cripps, Supervisor  
*Faculty of Education, Room 9,  
extension 3515*

The Rosalind Blauer Centre for Child Care offers two learning programs for children. They are a full-day program which includes a hot lunch and a half-day program which can be scheduled for mornings or afternoons. Both programs are open to the children of the community in addition to openings for the children of the students, faculty and staff of the University. A regional subsidy is available to eligible parents.

The centre, located in the Faculty of Education, is a co-operative corporation. The staff is qualified and experienced, assisted by volunteer parents and students.

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### Sexual harassment adviser

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Ann Bown, Adviser  
*Decew Residence, 213, extension 4019*

Brock University endeavors at all times to provide a working and learning environment that is supportive of scholarship and research and the fair treatment of all employees and students at the University. The basis for interaction is mutual respect, co-operation, and understanding. The university does not condone sexual harassment because it violates personal dignity and integrity.

By working together, we can ensure an atmosphere free from sexual harassment.

The adviser's office is open weekdays.

**FOR SPECIFIC REQUIREMENTS FOR GRADUATION FROM ANY OF THE PROGRAMS LISTED BELOW, PLEASE REFER TO THE RELEVANT SECTIONS OF THIS CALENDAR.**

FACULTY	DEGREE PROGRAMS	OTHER PROGRAMS
<b>BUSINESS</b>	<ul style="list-style-type: none"> <li>● Bachelor of Business Administration (BBA) [4 years]</li> <li>● Bachelor of Accounting (BAcc) [4 years]</li> <li>● Bachelor of Accounting (BAcc) - Co-operative Work/Study [4.5 years]</li> <li>● Bachelor of Business Economics (BBE) [3 years]</li> </ul>	<ul style="list-style-type: none"> <li>● Bachelor of Business Administration (BBA) as a second degree [2 years]</li> <li>● Bachelor of Arts - Honors (BA) - combined majors of Business and either Politics or Economics</li> </ul>
<b>EDUCATION</b>	<ul style="list-style-type: none"> <li>● Bachelor of Education (BEd)               <ul style="list-style-type: none"> <li>-Program I - Pre-Service</li> <li>-Program II - In-Service</li> <li>-Technological Studies</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Concurrent degree programs               <ul style="list-style-type: none"> <li>-Bachelor of Arts (Child Studies)/ Bachelor of Education (BA/BEd) [4 years]</li> <li>Bachelor of Science/ Bachelor of Education (BSc/BEd) [4 years]</li> </ul> </li> </ul>
<b>HUMANITIES</b>	<ul style="list-style-type: none"> <li>● Bachelor of Arts - Honors BA [4 years]</li> <li>● Bachelor of Arts - Pass (BA) [3 years]</li> </ul>	<ul style="list-style-type: none"> <li>● Bachelor of Education (BEd) Teaching English as a Second Language</li> </ul>
<b>MATHEMATICS AND SCIENCE</b>	<ul style="list-style-type: none"> <li>● Bachelor of Science - Honors (BSc) [4 years]</li> <li>● Bachelor of Science - Pass (BSc) [3 years]</li> </ul>	<ul style="list-style-type: none"> <li>● Concurrent degree program               <ul style="list-style-type: none"> <li>-Bachelor of Science/ Bachelor of Education (BSc/BEd) [4 years]</li> </ul> </li> <li>● Bachelor of Science (in Computer Science) (BSc) as a second degree               <ul style="list-style-type: none"> <li>- Honors [2 years]</li> <li>- Pass [1 year]</li> </ul> </li> </ul>
<b>PHYSICAL EDUCATION AND RECREATION</b>	<ul style="list-style-type: none"> <li>● Bachelor of Physical Education Honors (BPhEd) [4 years]</li> <li>● Bachelor of Physical Education - Pass (BPhEd) [3 years]</li> <li>● Bachelor of Recreation and Leisure Studies - Honors (BRLS) [4 years]</li> <li>● Bachelor of Recreation and Leisure Studies - Pass (BRLS) [3 years]</li> </ul>	<ul style="list-style-type: none"> <li>● Bachelor of Arts - Honors (BA) [4 years] Health Studies major</li> <li>● Bachelor of Arts - Pass (BA) [3 years] Health Studies majors</li> </ul>
<b>SOCIAL SCIENCES</b>	<ul style="list-style-type: none"> <li>● Bachelor of Arts - Honors (BA)[4 year]</li> <li>● Bachelor of Arts - Pass (BA) [3 years]</li> <li>● Bachelor of Business Economics (BBE) [3 years]</li> </ul>	<ul style="list-style-type: none"> <li>● Concurrent degree program               <ul style="list-style-type: none"> <li>-Bachelor of Arts (Child Studies)/ Bachelor of Education (BA/BEd) [4 years]</li> </ul> </li> <li>● Co-operative studies program (UEST)</li> <li>● Certificate in Public Administration</li> <li>● Certificate in Urban and Environmental Studies</li> </ul>

# Admissions

All prospective students are encouraged to apply and will be considered on the basis of evidence of probable success in their chosen program. Enrolment has been limited in order that our students may continue to benefit from the University's traditions of personal contact and individual attention. Applicants must be formally admitted to the University before they can register in degree credit courses.

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## Application deadline

Application for admission should be made as early as possible. Application forms must be received by June 1 for full-time studies and August 1 for part-time studies to ensure consideration for September registration. Students applying after this date, who are subsequently admitted, may be required to register late and pay the late registration fee.

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## How to apply

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### Ontario students currently in grade 12 or OAC

OUAC 101 application forms are available at your high school guidance office. The completed form and interim grades are to be sent to the Ontario Universities' Application Centre. Applicants who wish to be considered on final marks should forward a copy of their final grades directly to Brock University.

### All other full-time applicants

OUAC 105 application forms are available through the Office of the Registrar for previous high school matriculants, mature applicants, transfer, out-of-province and international students. The application form and appropriate fee must be forwarded to the Ontario Universities' Application Centre, Box 1328, Guelph, Ontario, N1H 7P4.

It should be noted that there is a \$15 fee for assessment of previous university or college transcripts for full-time applicants to undergraduate studies.

### Part-time degree and certificate applicants

Part-time degree applicants, as well as those seeking admission to certificate programs in Public Administration or Urban and Environmental Studies, should contact the Office of the Registrar to obtain the proper application form and to discuss their admission and program objectives.

It is the responsibility of all applicants to ensure that:

- i) all pertinent academic documentation is forwarded directly to the Office of the Registrar from institutions previously attended, such as secondary schools, colleges and universities;
- ii) proof of change of name (i.e., marriage certificate, notarized statement or other legal document) is provided if academic documents show a name other than that under which application is made;
- iii) evidence of proficiency in English is provided if English is the applicant's second language (see page 24).

Applicants withholding, misrepresenting or failing to provide information regarding previous university or college records are liable to have their registrations cancelled.

### Application for Residence.

**Students interested in residence should indicate this on the OUAC application form. Applications for residence will be included with offers of admission.**

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## Admission to undergraduate degree studies

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### Ontario Academic Courses (OAC)

Ontario secondary school students must present the Ontario Secondary School Diploma (OSSD). An overall average of 60 percent on six Ontario Academic Courses is the minimum required for consideration but a higher average will be required for most programs since the number of qualified applicants normally exceeds the spaces available.

High school students are encouraged to achieve as much breadth of preparation as possible in the course of their studies leading to the OSSD while also meeting the stated admission requirements of the University program to which they intend to apply.

Applicants eligible for admission to Arts or Science shall be offered entry into an honors program if their admission averages are 70 percent or higher.

### Academic standing accepted as equivalent to OAC

*Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island, Saskatchewan*  
Grade 12 senior matriculation with high standing.

*Quebec*  
CEGEP General 1 or grade 12 with high standing.

*United Kingdom, West Indies, East and West Africa, Hong Kong*  
The General Certificate of Education with passes in five subjects, of which at least two must be from distinct areas at the advanced level; or passes in four subjects, of which at least three must be from distinct areas at the advanced level. (Please note proficiency in English requirements, page 24).

*International Baccalaureate system*  
Applicants who have been granted the IB

diploma and accumulate a grade total of 28 may be considered for admission and may receive up to three transfer credits on the basis of higher level subjects completed with a grade of 5 or better.

#### *United States*

Grade 12 diploma with exceptionally high grades, SAT scores of V600, M550 or T1150 or two Advanced Placement courses with scores of 3 or better will be considered for admission to year 1.

Other students applying for admission to year 1 from the USA must have completed a minimum of 30 semester credits (45 quarter credits) in academic subjects with a minimum average of B at an accredited postsecondary institution.

#### *Other countries*

Applicants from areas other than those noted above will be evaluated on an individual basis. Original or certified true copies of transcripts are required including official English translations (where required). (Please note proficiency in English requirements, page 24.)

#### **Transfer from other universities**

##### *Canadian universities*

Applicants wishing to transfer to Brock from degree programs at other Canadian universities must normally offer the equivalent of an overall average of 65 percent as a minimum with a higher average being required where enrolments are limited. Applicants must also be eligible to reregister at their home institution. Normally transfer credit will be granted only for courses passed which are appropriate to the chosen program. Course attempts and transfer averages at the previous university will be recorded on the transfer students' records to place those students on an equal basis with those who take their entire undergraduate program at Brock.

No transfer credits will be granted for any courses completed at another university in fulfilment of the basic requirements for University admission. Credit may be allowed for any additional courses completed concurrently. The grades from other universities whose grading schemes differ from that of Brock Uni-

versity will be translated into equivalent Brock grades and admissibility and transfer credit assessed in these terms. Evaluation of all possible transfer credits available at the time of admission must be completed within one year of the date of admission to the University. (Please see page 36 for a description of the University attempt system.)

##### *Ryerson and Colleges of Applied Arts and Technology*

Students who achieve an overall standing of C or better in a degree program at Ryerson Polytechnical Institute are eligible for admission. Courses being considered for credit must have a minimum grade of C (60 percent) or equivalent.

Applicants must have a overall average of B (75 percent) or better in a three-year diploma program at Ryerson or an Ontario college of applied arts and technology (CAAT) to be considered for admission and possible transfer of up to five credits. Advance standing is based primarily upon:

- i) appropriateness of previous program to Brock program;
- ii) course content;
- iii) grades achieved in courses.

Applicants must have a overall average of B (75 percent) or better in a two-year program at Ryerson or a CAAT to be considered for admission and possible transfer of up to three credits.

Applicants who achieve a overall average of A (80 percent) in a one-year diploma program at Ryerson or a CAAT may be considered for admission. No transfer credit will be awarded.

CAAT applicants who do not meet these requirements will be considered on an individual basis.

##### *CA, CGA, CMA*

Individuals with CA, CGA, CMA designations may be granted up to five transferred credits, provided a minimum grade of 70 percent is achieved.

##### *Bible colleges*

Applicants who have completed a degree program at a bible college accredited by the American Association of Bible Col-

leges will be considered for admission and may receive transfer of up to five credits.

#### **Admission of mature students**

Those who are not eligible for admission in any of the categories listed above, who have been out of school for at least two years and who are at least 21 years old, may be considered for admission as mature students.

Mature applicants selected for admission are normally required to begin part-time study only. Such students must complete two credits with at least a C average out of four credit attempts to continue registration.

In support of the application, students will be asked to submit official copies of all pertinent academic records. In addition, students may be asked to submit a letter outlining:

- i) career ambitions;
- ii) work experiences;
- iii) why they may be successful at university.

An interview may also be required.

Mature student admission is only applicable to Canadian citizens and permanent residents.

#### **Admission of senior citizens**

Senior citizens (60 years of age or older) are encouraged to apply for admission to full-time or part-time studies as either credit or auditing students. Tuition fees for such students are waived.

#### **Concurrent secondary school/university enrolment.**

Students enrolled in less than a full-time load of Ontario Academic Courses (six), may be permitted to register concurrently for one credit, subject to the following provisions.

- a) They must be registered in a sufficient number of OAC to complete requirements for an Ontario Secondary School Diploma (OSSD) which meets normal university requirements.



## Admissions

b) They must have a least a B standing in the previous high school year in an advanced level program, be recommended by their school and be approved by the Brock department concerned.

c) Credit will be granted upon successful completion of the course and fulfilment of Brock's admission requirements.

### Readmission of students who were required to withdraw

The appeal to re-register shall be addressed to the Registrar for referral to the Senate Committee on Appeals.

### January entry

A student may begin first-year studies on a part-time basis in the Winter Term beginning in January. It should be noted, however, that the number and types of courses available then are limited.

### Non-degree admission to undergraduate studies

A non-degree student is one not proceeding towards a Brock University degree. Typical non-degree students are:

- (a) persons already holding a degree who wish to take courses for interest or upgrading purposes;
- (b) students from other universities taking courses on letters of permission.

Non-degree students who successfully complete a minimum of two credits, with an average of 60 percent or better, may apply for admission as degree or certificate candidates. Such applications will be considered on an individual basis and credit may be given for work already done.

### Special admission

A special student is one whose course load has been restricted because of the student's academic standing. Such students would normally be permitted to register in a maximum of 2 credits per academic session.

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### Admission to other programs

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### Faculty of Education

For information on admission requirements and procedures for the various programs of the Faculty of Education, see page 120.

### Graduate studies

For information on the admission requirements for graduate degree programs, see the Graduate Studies calendar. An undergraduate degree acceptable to Brock University, normally an honors degree in the appropriate field, is the minimum requirement.

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### Proof of proficiency in English

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All visa student applicants whose first language is not English must provide results of TOEFL. Other students whose first language is not one of the official languages of Canada may be required to provide TOEFL results. Normally, only those with scores of 550 or greater will be considered for admission.

Such students are required, as a condition of registration, to write the Brock English Language test. The test results determines the number of courses a student may take. Applicants with English OAC 1 and a TOEFL score of a least 600 will be exempt from writing the Brock English Language test.

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### International student immigration requirements

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Students entering Canada from other countries are required to comply with Canadian immigration requirements. Student visas are issued abroad by Canadian diplomatic, consular or immigration officers. Where there is no Canadian representative, prospective students may apply to representatives of the British government. An original letter of accept-

ance from Brock University must be presented at that time.

Registration in co-operative programs is available only to students eligible for employment in Canada in their chosen field.

A pamphlet outlining immigration requirements is available from Canadian immigration officers, Canadian embassies, consulates, high commissioners' offices, British consular offices or directly from the Immigration division, Manpower and Immigration department, Ottawa, Ontario, Canada.

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### Policy statement

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Brock University has had and will continue to have, a racially non-discriminatory policy and therefore does not discriminate against applicants and students on the basis of race, color or national or ethnic origin. Such a non-discriminatory policy applies to staff and extends to non-discrimination on grounds of creed or sex.

## Admissions Criteria - Brock University

Please check the following to ensure you will have the proper background for admission to Brock University. You must have six Ontario Academic Courses (OAC) which will qualify you for the OSSD in June of 1993 to be considered for admission to Brock in September.

Program	Required OAC Subjects	Strongly Recommended OAC Subjects	Comments
<b>Faculty of Business</b> Accounting (BAcc)	English OAC 1 Two mathematics averaging 75%		Normally a minimum average of 75% on 6 credits for consideration; co-op accounting normally 80% average on 6 credits for consideration.* Application deadline is April 1 for September entry
Business Administration (BBA)	English OAC 1; two mathematics averaging 65%		Normally a minimum average of 70% on 6 credits for consideration
Business Economics (BBE)	English OAC 1	Mathematics	Normally a minimum average in the high sixties on 6 credits for consideration
<b>Faculty of Humanities (BA)</b> Canadian & European Community Studies, Canadian Studies, Classics, Contemporary Cultural Studies, Dramatic Literature, English, Film, French, General Linguistics, German, History, Italian, Liberal Studies, Philosophy, Russian, Spanish	English OAC 1	History and a second language	Normally a minimum average of 70% on 6 credits for consideration
Music	English OAC 1	History and a second language	Theory placement test (Royal Conservatory Grade II level) and aural skills test must be passed. Audition required for applied music
Theatre	English OAC 1	History and a second language	A successful audition or interview is required
Visual Arts	English OAC 1	History and a second language	A satisfactory portfolio submission and interview are required
<b>Faculty of Social Sciences (BA)</b> Asian Studies, Child Studies, Communication Studies, Economics, Labor Studies, Geogra- phy, Politics, Psychol- ogy, Sociology, Urban & Environmental Studies, Women's Studies	English OAC 1	For economics major OAC in mathematics	Normally a minimum average of 70% on 6 credits for consideration for all programs within the Faculty of Social Sciences except for Child Studies which may be 80% for consideration
Physical Geography (BSc)	One science	Physical geography, mathematics and English OAC 1	
Environmental Science (BSc)		Biology, chemistry, mathematics and English OAC 1	
*In accordance with the regulations of Employment and Immigration Canada, admission to the BAcc Co-op option is limited to students eligible for employment in Canada in their chosen field.			

Program	Required OAC Subjects	Strongly Recommended OAC Subjects	Comments
Faculty of Mathematics & Science (BSc) Biological Sciences	Biology, chemistry and either mathematics or physics.	English OAC 1	Normally an overall average of at least 70% on 6 credits for consideration for all programs within the Faculty of Mathematics and Science except for the Concurrent BSc/BEd program, as indicated below
Concurrent BSc/BEd Science Program	Minimum average of 80% in two sciences, one mathematics and English OAC 1		For teaching at the Junior/Intermediate level (Grades 4 - 10). A personal letter, letters of recommendation and an interview may be required of applicants
Mathematics program	Minimum average of 80% in two mathematics, one science and English OAC 1		
Chemistry and/or Physics	Chemistry, physics and two mathematics	A third mathematics and English OAC 1	
Computer Science	One mathematics (minimum of 65% required)	English OAC 1	
Earth Sciences	Any two of biology, physics, geology or chemistry	Mathematics and English OAC 1.	
Environmental Science	(see Faculty of Social Sciences above)		
Mathematics	Two mathematics	A third mathematics and English OAC 1	
Physical Geography	(see Faculty of Social Sciences above)		
Science - Other: Biochemistry, Biotechnology, Neuroscience, Pre-Professional Studies for the Health Sciences	Biology, chemistry and either mathematics or physics	English OAC 1	
Faculty of Physical Education and Recreation Physical Education (BPhEd)	English OAC 1		Normally a minimum average of 70% on 6 OAC credits for consideration for all programs within the Faculty
Recreation & Leisure Studies (BRLS)	English OAC 1		
Health Studies (BA)	English OAC 1		
Education Concurrent BSc/BEd	See Faculty of Mathematics & Science above		
Concurrent BA/BEd	Students interested in the BA/BEd concurrent program apply to the BA Child Studies common first year. Those admitted complete first year and may then apply to transfer into Year 2 of the BA/BEd program, which is limited in enrolment.		

# Fees

(Subject to change)

Academic fees for both full-time and part-time students are charged on a per credit basis (see schedule below). These include fees for registration, tuition, library and examinations.

Fee per credit 1993-1994

*undergraduate and Faculty of Education--regular	
per full credit	\$442.00
per half credit	\$221.00
*undergraduate--visa	
per full credit	\$1565.00
per half credit	\$782.50
Challenge for credit (per credit)	
regular	\$220.00
visa	\$433.00
Co-op accounting administrative fee	\$450.00
Late registration fee	\$35.00
Replacement of lost service card	TBA
Transcript of record (\$2 for each additional copy on the same order)	\$3.00
Duplicate tax certificate --per copy (previous years' replacement only)	\$10.00
Returned cheques**	\$20.00
Pre-collection letter service	\$10.00
Off-campus examination fee	\$50.00
Replacement of diploma	\$25.00
Another university transcript assessment	\$15.00
Letter of permission application fee	\$25.00
Verification of registration or other status	\$15.00

\*Students who are not Canadian citizens, landed immigrants, international students sponsored by CIDA or who do not have diplomatic privileges, will pay the visa student fee. Please consult the Finance Office for full details.

\*\*Students whose cheques are returned NSF at registration will be charged the \$20 returned cheque fee as well as the late registration fee of \$35.

The charge for auditing a course is 50 percent of the normal course fee or the withdrawal charge at time of change to audit status, whichever is the greater.

In addition to the academic fee, any Canadian citizen or landed immigrant taking three and one-half or more credits in the Fall/Winter Session will be required to pay a non-refundable health fee of \$30. Students increasing their load to three and one-half or more credits will be assessed the health fee. Students paying the international (visa) student fee will pay a \$30 non-refundable health fee.

Included in the tuition fee is \$10 per credit which is collected on behalf of the Brock University Students' Administrative Council (BUSAC) by the Board of Trustees and a \$12.40 per credit athletic, intramural and recreational program and facilities fee. Also included is a fee of \$10 per credit collected on behalf of BUSAC for the construction of a Student Centre; \$2.50 per credit on behalf of BUSAC for the Capital Fund; \$1.50 per credit on behalf of OPIRG and \$.60 per credit on behalf of OFS. This portion of the fee is non-refundable.

### Payment of fees

All fees are due and payable at confirmation of registration at which time students must have sufficient funds to pay at least the minimum instalment of tuition and residence fees. Students taking three or more full credit courses (six or more half credit courses) may pay with the minimum instalment. The minimum instalment is required at registration. If you are not paying your account in full at registration you will be subjected to service charges on your outstanding balance. Service charges will be assessed the beginning of each month starting in November (but excluding January 1994)

and continuing to the beginning of September 1994. (See the following section for the specific dates.) Your remaining balance is payable without further notice. Failure to receive a bill does not excuse you from the responsibility for payment of the service charge. A balance of your account may be obtained from the Finance office, Monday - Friday 8:30 am - 1:00 pm - 4:30 pm or by telephoning (416) 688-5550, extensions 4260 or 3806.

Regardless of the date on your cheque, unless it is received in the Finance Office by the specified dates, you will be subject to the service charge. Payment in person during regular hours will ensure date of payment.

Students receiving government assistance will still be subject to service charges on their outstanding balance. This service charge has been included in the computation of OSAP assistance.

Specific service charge dates are as follows:

Last date for payment without service charges	Rate for each \$100 or part owing	Date charges assessed
Nov. 1, 1993	\$1.50	Nov. 2, 1993
Dec. 1, 1993	\$1.50	Dec. 2, 1993
Feb. 1, 1994	\$1.50	Feb. 2, 1994
Mar. 1, 1994	\$1.50	Mar. 2, 1994
Apr. 1, 1994	\$1.50	Apr. 4, 1994
May 2, 1994	\$1.50	May 3, 1994
Jun 1, 1994	\$1.50	Jun. 2, 1994
Jul 4, 1994	\$1.50	Jul. 5, 1994
Aug. 2, 1994	\$1.50	Aug. 3, 1994
Sept. 1, 1994	\$1.50	Sept. 2, 1994

Minimum instalment (regular) SEPTEMBER, 1993

5.0 credits	\$1575.00
4.5 credits	\$1425.00
4.0 credits	\$1275.00
3.5 credits	\$1125.00
3.0 credits	\$950.00

**Fees**

Minimum instalment (visa students)  
SEPTEMBER, 1993

5.0 credits	\$5500.00
4.5 credits	\$4975.00
4.0 credits	\$4425.00
3.5 credits	\$3875.00
3.0 credits	\$3325.00

**The University will not be held responsible for lost or misdirected mail.**

Senior citizens (aged 60 at time of regular registration) will be permitted to enrol in a course, or courses, on a regular or audit basis without payment of the regular tuition fee. Application for admission must be made in the normal manner.

Students expecting to receive assistance through the Ontario Student Assistance Program must file their application with the Financial Aid Office no later than June 30. Students who apply after this date and who have not received written confirmation that their applications have

been processed must pay the required fees at registration.

Students whose cheques presented at registration are returned by the bank (NSF or for any other reason) will have to pay the \$20 returned cheque charge. A certified cheque is required to clear outstanding accounts.

No student having an outstanding account with the University will receive a degree or a statement of final grades, or have any such statements furnished to parties outside the University until the debts have been cleared to the University's satisfaction. Final grades may be released by the Office of the Registrar only.

**Residence fees**

In 1992-1993 the residence rates for room and board averaged about \$4400 depending on the type of accommodation and meal plan. An increase is expected for 1993-1994.

No refunds will be made on duration 1 courses after February 1, on duration 2 courses after October 22 or on duration 3 courses after February 18.

Students should note the dates for withdrawal without academic penalty shown in the *Schedule of dates* section.

Inquiries concerning fees should be addressed to the Finance Office, Schmon Tower, 12th floor, telephone (416) 688-5550, extensions 3286, 4260 or 3283.

**Withdrawal charges**

From September 13 through September 24 no charges are levied for dropping, adding or withdrawing. After September 24, a withdrawal charge will be levied based on the table below.

**Tuition fees at withdrawal**

Withdrawal notification, in writing after the closing of BIRT, must be received in the Office of the Registrar by the dates noted below for the 1993-94 Fall/Winter Session. Discontinuing attendance at classes, notification to the instructor or stopping payment on a cheque presented at registration does not constitute official withdrawal. Tuition credit schedule is as follows:

Credit*	Duration 1	Duration 2	Duration 3
100%	September 13 - 24	September 13 - 24	January 10 - 21
75%	September 25 - October 4	-----	-----
70%	October 5 - 13	-----	-----
65%	October 14 - 22	-----	-----
60%	October 23 - 29	September 25 - October 4	January 22 - 31
55%	October 30 - November 5	-----	-----
50%	November 6 - 12	October 5 - 13	February 1 - 9
45%	November 13 - 19	-----	-----
40%	November 20 - 26	October 14 - 22	February 10 - 18
35%	November 27 - December 3	-----	-----
30%	December 4 - January 17	-----	-----
25%	January 18 - 25	-----	-----
20%	January 26 - February 1	-----	-----
0%	After February 1	After October 22	After February 18

\*The credit will be applied to your account. Refunds are only mailed if your account is paid in full at the time of withdrawal.

## Glossary of terms

### Academic year

The academic year runs from the commencement of the Spring Session until the end of the Fall/Winter Session.

### Anti-requisite or exclusion

A course which cannot be taken before, after or at the same time as the course with which it is listed.

### Attempt

Any course for which a final grade has been assigned, whether it is passed or failed. Repeated courses and any from which a student has not officially withdrawn are considered attempts. Limits on the number of attempts are imposed. See page 36.

### Auditor

Auditors attend lectures as listeners only; they do not submit assignments, write examinations or receive grades.

### BIRT

The computerized Brock Information and Registration by Telephone system which allows students to complete their course registration by touchtone telephone. A registration guide is available prior to each session.

### Context credit

A credit chosen from the lists of courses in the humanities, sciences and social sciences which satisfy the context requirements. See page 33.

### Co-requisite

A course which is to be taken concurrently with another course.

### Course level requirements

Students are normally required to complete five credits at the year 1 level before proceeding to courses at a higher level. It is generally expected that they will successfully complete at least three credits at the year 2 level before proceeding to third-year courses and a further three credits at the year 3 level before undertaking fourth-year courses.

### Credit

Credit is assigned to a course when a passing grade is awarded. The value of the credit is determined by the alpha character in the course number. See page 30.

### Cross-listed course

A course which is listed under two or more departments. It may be taken for credit in only one of the departments.

### Department

The faculty group responsible for teaching a particular subject or subjects.

### Duration 1, 2 or 3

Courses taught over two terms of any session are identified as duration 1, those taught entirely in the first term as duration 2 and those entirely in the second term as duration 3.

### Elective

Any credit course other than the named requirements for a degree program.

### Exemption

When exemption from a course (normally a required one) is granted, no credit is given for that course. It must be replaced with a course of equal credit in the degree program.

### Faculty

A grouping of departments headed by a dean. (See page 31).

### Full-time student

One who is registered in more than three credits during the regular academic year.

### Honors degree

A 20 credit honors degree is awarded upon the successful completion of an approved program with first- or second-class honors standing. See page 37.

### Humanities language requirement

All students in a humanities major must complete a credit in a second language other than English within year 1 or year 2. Where half credit courses are used to satisfy the requirement, both half credits must be in the same language. Acceptable courses are listed along with other departmental requirements in the humanities departmental sections of the calendar.

### Letter of permission

A formal document which allows a Brock student to take courses at another university for credit towards a Brock University degree. See page 38.

### Major or combined major

A specific concentration of credits within a degree program as required by the major department(s).

### Part-time student

One who is registered in three credits or fewer during the regular academic year.

### Pass degree

A 15 credit pass degree is awarded upon the successful completion of an approved program with a minimum overall cumulative average of 60 percent. A pass degree with distinction is awarded when the overall cumulative average is 75 percent or better.

### Prerequisite

A specific requirement to be fulfilled before registration in a course, usually the successful completion of another course or permission of the instructor.

### Registered student

Registration consists of registering for courses, confirmation of registration and making payment of fees.

### Session

The Fall/Winter Session extends from September to April and consists of 2 terms of 12 weeks each; Spring Session consists of 10 weeks from the end of April to the beginning of July and Summer Session is 6 weeks from the beginning of July to the middle of August. See pages 4 - 8 for the actual dates.

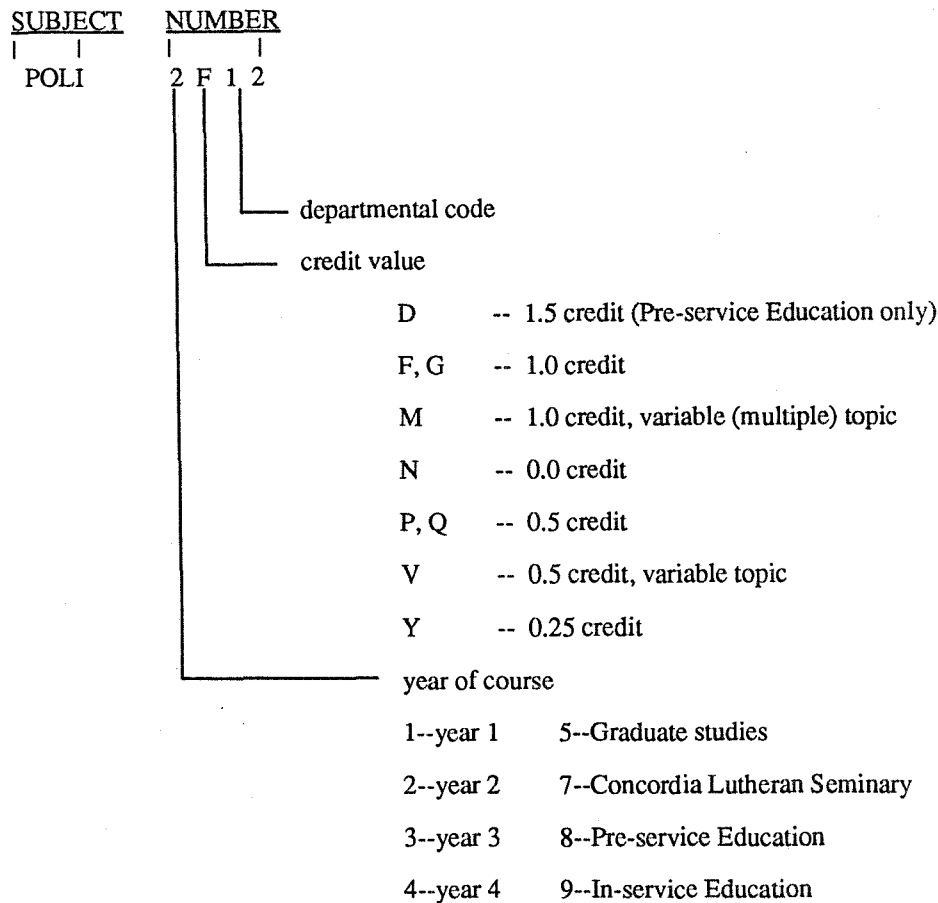
### Term

A term is a specific period of classes: Fall Term, September to December; Winter Term, January to April.

### Transcript

A cumulative printed record, of the results for all courses in which a student was officially registered at the end of the course change period. See page 36.

# Course numbering system



**Notes:**

1. Courses numbered 2(alpha\*)90 or higher may count for credit as second- or third-year courses.
2. Courses numbered 3(alpha\*)90 or higher may count for credit as third- or fourth-year courses.
3. Courses taken prior to 1987-88 will be listed on transcripts and statements of standing using the original course number.

\*alpha stands for any alphabetic letter in the credit value field.

**Examples:**

- |                |  |
|----------------|--|
| THEA 2F99      | -year 2 one credit course in Theatre--may count as a second- or third-year course.   |
| CLAS 2P10      | -year 2 half credit course in Classics.  |
| POLI 3V70-3V79 | -year 3 half credit course in Politics. Where the topic varies from year-to-year. Each separate topic will be assigned a unique number in the 70-79 range. |
| SOCI 3M80-3M89 | -year 3 one credit course in Sociology. Where the topic varies from year-to-year. Each separate topic will be assigned a unique number in the 80-89 range. |
| EDUC 8Y25      | -Pre-service Education one-quarter credit course.  |
| EDUC 9F42      | -In-service Education one credit course.   |
| POLI 5V30-5V39 | -Graduate studies half credit course, variable topic.  |

**It should be noted that not all courses are offered each year. The BIRT registration guide should be consulted for offerings in each session.**

# Academic Programs and Regulations

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## Faculty structure

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The academic units at Brock University are grouped into six faculties. These are:

### Faculty of Humanities

Applied Language Studies (includes Teaching English as a Second Language)  
Canadian and European Community Studies  
Canadian Studies  
Classics (Greek, Latin)  
English Language and Literature  
Extrdepartmental Studies  
Film Studies, Dramatic and Visual Arts (includes Drama, Film, Contemporary Cultural Studies, Theatre, Visual Arts)  
French, Italian and Spanish  
Germanic and Slavic Studies (German, Russian)  
History  
Liberal Studies  
Music  
Philosophy

Note: see page 32 for humanities language requirement.

### Faculty of Social Sciences

Asian Studies  
Business Economics  
Child Studies  
Communications Studies  
Economics  
Environmental Science  
Labor Studies  
Geography  
Politics  
Psychology  
Sociology  
Urban and Environmental Studies  
Women's Studies

### Faculty of Mathematics and Science

Biochemistry  
Biological Sciences  
Biotechnology  
Chemistry

Computer Science and Information Processing  
Earth Sciences  
Mathematics  
Neuroscience  
Physics  
Pre-professional Studies for the Health Sciences  
Science

### Faculty of Business

Accounting and Finance  
Management and Marketing  
Business Economics

### Faculty of Physical Education and Recreation

Health Studies  
Physical Education  
Recreation and Leisure Studies

### Faculty of Education

Pre-service Education  
Continuing Studies (In-service Education)

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## Degree requirements

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Students may complete a program of studies under the regulations of the calendar under which they first registered or of a more recent calendar if it is to their advantage to do so.

A student transferring from another university may earn a Brock 20 or 15 credit degree with a minimum of five Brock credits or a Brock BEd Route II with a minimum of four Brock credits.

**It is the responsibility of each student to ensure that the courses selected meet the academic requirements for the degree being pursued.**

A 20 credit honors degree is awarded on the successful completion of an approved program with first- or second-class honors standing. (See page 37 for honors standing terminology.)

A 15 credit pass degree is awarded on the successful completion of an approved program with an overall cumulative grade average of 60 percent.

Note: Only 20 credit honors degrees are available in Business and Accounting. Business Economics, Teaching English as a Second Language, Italian and Russian offer pass degrees only.

In all honors degree programs, at least twelve credits must be numbered 2(*alpha*)00 or above, six of which must be numbered 2(*alpha*)90 or above and of these, three must be numbered 3(*alpha*)90 or above. In all pass degree programs, at least seven credits must be numbered 2(*alpha*)00 or above, three of which must be numbered 2(*alpha*)90 or above.

Among the first five credits, students must have completed:

1. courses from at least four departments;
2. at least one of the required three context credits (see page 33).

Among the first ten credits, students must have completed all three of the required context credits (see page 33).

Students in four-year honors professional programs must complete the context requirements by the end of the third-year of the program.

**A maximum of seven credits toward an honors BA or BSc and five credits toward a pass BA or BSc degree, may be taken from any combination of Business or designated Education, Physical Education and Recreation and Leisure Studies courses.**

Note: please refer to the Education, Physical Education and Recreation and Leisure Studies sections of this calendar for listings of courses which may be used for BA or BSc credit.

Year 1 in all programs provides a student with a broad choice of options. In year 2, students select a major field of study and program pattern. This may be either a single major, a combined major or an Integrated or General Studies program.



## Academic Programs and Regulations

A single major honors degree program generally requires ten credits in one department. Seven credits are normally required for a single major pass degree.

Combined major degree programs permit a student to concentrate in two subject areas (excluding Education, Physical Education and Recreation and Leisure Studies). A minimum of fourteen credits (seven from each) is required for a combined major honors degree and a minimum of ten credits (five from each discipline) is required for a combined major pass degree. Specific course requirements for major programs are described in the individual department's section of the calendar. If a desired combined major program is not outlined in the calendar, students should consult the chairs of those particular departments.

**General or Integrated Studies programs** permit a student to pursue a pattern of studies which does not coincide with either a single or combined major arts or science program. A credit in Mathematics or Computer Science is required of students who choose a concentration of courses in the natural or social sciences; a credit in a language other than English is required of students who choose a concentration of courses in the humanities.

In General Studies, although there are no specific course requirements, a student must include a minimum of seven credits in one subject and five in another for an honors degree; for a pass degree, five credits in one subject and three in another. All such programs must be approved by the appropriate dean or designate.

Integrated Studies programs are specifically constructed programs at the honors or pass level which span two or more departments and are designed for students whose unique interests cannot be satisfied by a single or combined major. A clear and predetermined plan of interdisciplinary study must be approved by the appropriate dean.

Combined major and General or Integrated Studies program students will receive a BA degree if the majority of their

credits is in arts or a BSc if the majority of their credits is in sciences.

### Major requirements

A minimum of 60 percent in the introductory course(s) of the desired major(s) is necessary in order to continue in that program (see individual departmental requirements). Additionally, students in all programs are required to maintain a minimum overall major average of 60 percent in order to continue in that major. Only courses taken at Brock will be used in determining a student's major average. All credits from the areas of concentration and for some programs, required courses from other departments will be designated as major credits. In a General or Integrated Studies program, all credits from the areas of concentration will be designated as major credits. The major average is calculated by dividing the sum of the numeric grades assigned to the major credits by the number of major credits.

Students in a single or combined major program who do not attain a grade average of 60 percent in their major credits should select another program of study.

### Language requirement for students in the humanities

Students enrolling in a humanities single major, combined major with on or both majors in the humanities or a General or Integrated Studies program with a major concentration in the humanities are required to complete one credit in one language other than English to fulfil the Humanities language requirement. Where half credit courses are used to satisfy the requirement, both half credits must be in the same language. The choice of the language is left to the student unless specifically designated by the program. Under special circumstances ENGL 3F92 (*Old English*) may be used to satisfy the language requirement. Other languages currently offered by the University are: Cayuga, Dutch, French, German, Greek, Italian, Japanese, Latin, Mandarin Chinese, Mohawk, Polish, Sanskrit, Spanish and Russian.

Admission to language courses beyond the 1(alpha)00 level is dependent upon

completing the prerequisite(s) for the course. Students who have acquired high school credit in the chosen language will be excluded from certain lower level courses depending upon their level of proficiency in the language. Questions should be referred to the language department concerned.

Students whose secondary school program was taught either entirely or to a significant extent in a language other than English and who would, therefore, qualify to enrol in a 2(alpha)00 level course or above are exempt from the language requirement. For example, such an exemption will be granted to Ontario OAC graduates of Français and French immersion programs. Other students seeking this exemption require the approval of the Dean of Humanities when the language of instruction is not one of the above group.

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### Year 1 literacy test requirement

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Prior to registration in September a literacy test is to be written by

- 1) incoming full-time, first-year students who have not been granted transfer of credit;
- 2) part-time students with a 91 student number or higher who will have completed two Brock credits prior to September 1989.

Failure to write the test will result in an incomplete registration. The results of the test will be confidential and will not be entered on University records. However, students are asked to allow the University to use the results of these tests as anonymous data for ongoing research into the relationship between reading and writing skills and university marks.

By the end of September students will be advised if their assessment indicates a need to improve their skills. A writing workshop and several reading programs are offered by the Brock Counselling Centre, Room 411 in the Schmon Tower.

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**Context requirements**

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The context requirement is designed to permit a student to view the "core" of a particular major in a more general learning "context". All students must include one credit from each of the three groupings during their first ten credits (see degree requirements, page 31).

Normally at least one of the context credits must be completed as part of the first five credits.

**Humanities context courses**

Canadian Studies 1F91  
Classics 1P91, 1P92, 1P93, 1P95, 1P97  
Drama 1F93  
English 1F91, 1F99; English 1P97, 1P98 (for BAcc only)  
Film 1F94  
French 1F90  
German 1F90, 1F96, 1P93, 1P94  
\*History 1F95, 1P92, 1P93\*\*  
Italian 1F90, 1F95  
\*\*\*Liberal Studies 1F90  
Music 1F50, 1P11, 1P12  
Philosophy 1F90, 1F91, 1F93, 1F94  
Russian 1F90, 1F95  
Spanish 1F90, 1F95, 1F96  
Visual Arts 1F90

**Social Sciences context courses**

Economics 1P91, 1P92  
\*Geography 1F90  
\*History 1F95, 1P92, 1P93\*\*  
Labor Studies 1F90  
Linguistics 1F91  
Politics 1F90  
Psychology 1F90  
Sociology 1F90  
Women's Studies 1F90

**Sciences context courses**

Astronomy 1F00 (see Physics department)  
Biology 1F25, 1F90  
Chemistry 1P80, 1P81, 1P90, 1P91  
Earth Sciences 1F90, 1F95  
\*Geography 1F91  
Physics 1F20, 1F90  
Science 1F30

\*In cases where subjects are listed under two categories, only one of the requirements may be satisfied by that course

(e.g., if GEOG 1F90 is taken to fulfil the requirement for the social sciences option, GEOG 1F91 may not be taken to fulfil the sciences requirement).

\*\*History majors may not use a history credit to satisfy the social science context requirement.

\*\*\*Enrolment may be limited.

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**Course load**

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Students who are enrolled in three and one-half or more credits during the Fall/Winter Session are considered to be full-time; however, the normal course load for a full-time student is five credits. In the Spring or Summer Sessions, the normal load is one credit. Permission to take extra credits may be granted by the appropriate academic dean or designate or by the registrar. Such permission will normally be given only if a student has completed five credits with at least second-class (70 percent) standing.

A student may not attempt five or more credits in any one department in a single session without the approval of the appropriate dean or designate.

Students required to take English as a second language courses (ESLX) may be required to take a reduced course load.

Mature entry students must complete two credits with a C average in order to be considered for full-time studies.

Anyone admitted as a special student will normally be permitted to enrol in one credit per session.

Non-degree students are students taking Brock courses but not proceeding towards a Brock degree. Students on letters of permission, upgrading students and exchange students fall into this category.

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**Limited enrolment courses/programs**

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Some courses and programs are subject to enrolment limitations. Consult calen-

dar entries and the undergraduate registration guide for details.

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**Name changes**

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As Brock University is committed to the integrity of its student records, each student is required to provide, either on application for admission or in personal data required for registration, his/her legal name. Any requests to change a name, by means of alteration or deletion, substitution or addition, must be accompanied by appropriate supporting documentation. Upon making application for graduation a student may be asked to provide proof of his/her name.

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**Registration and withdrawal**

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Students are officially registered for courses only by completing registration according to procedures outlined in registration guides published by the Office of the Registrar and by the payment of the appropriate fees. Students whose cheques are returned NSF (not sufficient funds) will be deregistered without further notice. (See page 27.)

A student will register in one lecture section of each course and will select one tutorial, seminar and/or lab section per course as appropriate. Students are expected to attend all lectures, labs, tutorials and seminars of the sections in which they are registered. It should be noted that failing or withdrawing from a first term course may necessitate withdrawal from the subsequent course. **This is the student's responsibility and is not done automatically;** if in doubt, consult the Office of the Registrar.

**Formal voluntary withdrawal**

A student may voluntarily withdraw from the University and/or courses without academic penalty by informing the Office of the Registrar, in writing, no later than the dates shown below:

## Academic Programs and Regulations

### *For Fall/Winter term:*

Duration 1 - 12 weeks after the beginning of term (any time prior to the start of duration 3)\*;

Duration 2 - 6 weeks after the beginning of term\*;

Duration 3 - 6 weeks after the beginning of term\*.

### *For Spring term:*

Duration 1 - 5 weeks after the beginning of term (any time prior to the beginning of duration 3)\*;

Duration 2 - 2.5 weeks after the beginning of term\*;

Duration 3 - 2.5 weeks after the beginning of term\*.

### *For Summer term:*

Duration 1 - 3 weeks after the beginning of term (any time prior to the beginning of duration 3)\*;

Duration 2 - 1.5 weeks after the beginning of term\*;

Duration 3 - 1.5 weeks after the beginning of term\*.

A student may voluntarily withdraw from the University and/or courses, by informing the Office of the Registrar, in writing, but will lose an attempt value equal to the credit value of the course no later than the dates shown below:

### *For the Fall/Winter term:*

Duration 1 - 16 weeks after the beginning of term\*;

Duration 2 - 8 weeks after the beginning of term\*;

Duration 3 - 8 weeks after the beginning of term\*.

### *For Spring term:*

Duration 1 - 7 weeks after the beginning of term\*;

Duration 2 - 3.5 weeks after the beginning of term\*;

Duration 3 - 3.5 weeks after the beginning of term\*.

### *For Summer term:*

Duration 1 - 4 weeks after the beginning of term\*;

Duration 2 - 2 weeks after the beginning of term\*;

Duration 3 - 2 weeks after the beginning of term\*;

\*For courses not following the normal duration 1, duration 2 and duration 3 pattern, the calculated mid-point and two-thirds point will be used for the application of this policy.

No withdrawals will be permitted after the two-thirds point.

Grades will be recorded on students' transcripts for all courses in which they have officially registered and from which they have not officially withdrawn.

## Evaluation

To receive credit for a course, students must successfully complete all the work and the progress and/or final examination where the latter is required.

Final grades are based on examinations, tests, seminars, reports, essays, lab work, etc. The final grade must be computed from at least three pieces of work; no single piece of work may account for more than 50 percent of the final grade in a one credit course and no more than 60 percent of the final grade in a half credit course. At least two methods of evaluation (different in kind) must be used in arriving at the final grade. Students will be advised in writing of the proposed method of evaluation in each course by the last date for course changes. This will include the nature and due dates of assignments, penalties for late submission of assignments and the relationship of attendance to grades. Rounding of the final grade to comply with the University's 0, 2, 5, 8 marking scheme (see Grades, below) is at the instructor's discretion and need not necessarily be to the closer of those numbers.

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## Access to records and disclosure of information

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### Student access

Students have the right to inspect all documents contained in their own record, with the exception of evaluations and letters of reference supplied to the University with the understanding that they be kept confidential.

Students have the right to request that erroneous information contained in their records be corrected and that recipients of any information found to be in error be advised of the correction.

Students wishing to inspect their record must make an appointment with an authorized official of the Office of the Registrar.

All official transcripts will be complete and unabridged. Partial transcripts cannot be issued.

Transcripts issued directly to students bear the notation "Issued to Student".

Documents pertaining to a student's achievement at another institution, which may have been received by the University will not normally be released or redirected.

### Employee and student organization access

Employees of the University are permitted access to information contained in student records, if they **NEED TO KNOW** the information in order to perform their official duties. As a general rule, only employees involved in some aspect of academic administration or student affairs are given access to the contents of student records. The Brock University Students' Union (BUSU), as well as constituent organizations authorized by them, may obtain listings of students with names, addresses and telephone numbers for purposes of communicating with their membership. Listings will be provided by the Office of the Registrar

upon written request signed by an authorized officer of BUSU with the understanding that the information will not be disclosed to third parties (and returned to the Office of the Registrar when requested) and will not be used for solicitations or commercial purposes.

**Third party access**

It is University policy to make a minimum of information freely available to all inquirers. This includes the student's name, current registration status, field of studies and degrees conferred by the University. Except as specified below, other information contained in the record will be disclosed only with the student's written consent. This restriction applies to requests from parents, spouses, credit bureaus and police.

Specified records or portions thereof may be provided to persons or agencies pursuant to a court order, summons or sub-poena directing the University to release information; to Statistics Canada and the Ministry of Colleges and Universities in connection with enrolment audits; or in accordance with the requirements of duty constituted professional licensing and certification bodies.

In emergency situations involving the health and safety of an individual, or in compassionate situations such as death or injury of a relative a friend of a student, the Registrar may, if it is considered to be in the best interest of the student, authorize the release of information needed to contact the student.

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**Grades**

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The following grades are awarded for undergraduate courses:

A 90, 92, 95, 98, 100

Reserved for students where work is of outstanding quality that provides clear evidence of a rare talent for the subject and of an original and/or incisive mind.

A 80, 82, 85, 88

Awarded for excellent, accurate work in which evidence of a certain flair for and comprehension of the subject is clearly perceptible.

B 70, 72, 75, 78  
Indicates competent work that shows a sound grasp of the course goals without being distinguished.

C 60, 62, 65, 68  
Represents work of adequate quality which suffers from incompleteness or inaccuracy.

D 50, 52, 55, 58  
Given where the minimum requirements of a course are barely satisfied.

F 45 or lower  
Means that minimum requirements have not been met and no credit has been given for the course.

AG Aegrotat Standing: a passing grade assigned to students who, for documented reasons, were not able to write a final or a subsequently scheduled special examination and whose term work has been of at least a passing grade.

SP Special examination (see page 36).

SA Satisfactory: used for work terms and non-credit PHED and RECL courses.

UN Unsatisfactory: used for work terms and non-credit PHED and RECL courses.

WD Withdrawn.

IN Incomplete: a temporary grade granted only in exceptional circumstances to a student who has been unable to complete some part of the term work in a course. A final grade must be submitted within 56 days of the last day of the examination period.

IP In Progress: used only for fourth-year thesis and project

courses or graduate courses (the list of acceptable courses is available in the Office of the Registrar). An IP for undergraduate courses must be cleared within twelve months of the initial registration, otherwise the student must reregister in that course and pay the appropriate course fee.

NR Not reported.

CH/F Grade awarded to indicate a successful/unsuccessful challenge for a credit course.

Grades applicable to Continuing Studies and Pre-service Faculty of Education courses only:

P1 82, 85, 88, 92, 95, 98, 100  
P2 72, 75, 78  
P3 60, 62, 65, 68  
F 58 or lower  
P/F EDUC 8F08 only  
WD Withdrawn  
IN (as above)  
NR (as above)

Grades are mailed to students about four weeks after the end of the examination period. Final grades may be released only by the Office of the Registrar.

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**Calculation of averages**

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The overall grade average which is used to determine academic standing is computed by dividing the sum of the numeric grades assigned to credits by the total number of credits. Failures are not included in average calculations.

Average =

$$\frac{\text{The sum (credit weight x passed grades)}}{\text{Total number of passed credits}}$$

*Note:*  
Overall average: calculated using all successfully completed credits, including transfer credits.

## Academic Programs and Regulations

Transfer average: calculated using all successfully completed credits transferred from another university.

Brock average: calculated using all successfully completed Brock credits.

Major average: calculated using all successfully completed major credits. Courses considered to be major credits are determined by the department. Only credits taken at Brock are used in the determination of the major average.

Non-major average: calculated using all successfully completed credits other than major credits. Transfer credits are not considered in the calculation of this average.

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### Transcripts

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Copies of student transcripts will be issued at the student's request, subject to reasonable notice. Requests should be submitted in person or by writing to the Office of the Registrar. In accordance with the University's Policy on Access to Student Records, the student's signature is required for the release of records. Transcripts issued directly to the student bear the official seal of the University, but are stamped "Issued to Student". Partial transcripts cannot be issued. The Office of the Registrar cannot be responsible for transcripts lost or delayed in the mail.

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### Examinations

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Progress and final examinations are compulsory in all courses numbered 1(alpha)00 - 1(alpha)99. Final or progress examinations in courses numbered 2(alpha)00 or above may or may not be held, at the discretion of the instructor.

In courses requiring a final examination, failure to write the examination will normally result in a failing grade (00F). In case of illness, medical documentation must be submitted to the Office of the

Registrar **within seven days of the examination**. If, for religious reasons, a student is unable to write a final examination at the time scheduled, application for a special examination must be made to the Office of the Registrar at least **two weeks prior** to the examination period. Supportive evidence may be required.

Special examinations may be granted to students who for valid reasons have missed final examinations. These are normally held no later than the spring examination period for Fall Term duration 2 courses; no later than the summer examination period for duration 1 and duration 3 Fall/Winter Session courses; no later than the Fall Term duration 2 final examination period for Spring and Summer Sessions.

**It is the students' responsibility to contact the course instructor to make arrangements for a special examination.**

Class tests and examinations may only be written during a regularly scheduled class or during a formal examination period. Students cannot be required to write an examination or test in a time period which conflicts with any of their scheduled classes.

Lab tests (worth no more than 20 percent of the final grade) may be scheduled in the lab period of the last week of term. No other test or examination worth more than 5 percent is allowed in the last two weeks of term.

**In some cases it may be necessary for students registered in evening courses to write examinations during the day or vice versa. Examination timetables are posted prior to registration. It is the students' responsibility to ensure that courses in which they are registering do not have conflicting examinations.**

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### Academic standing

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Students' grades are reviewed at the end of each session and they are informed of their academic standing.

### Dean's honors list

Students are placed on the Deans' honors list if they have completed the normal maximum course load in their program in the preceding Fall/Winter session with an overall sessional average of 80 percent.

### Number of Attempts

Each student will be allowed a maximum of 23 credit attempts to achieve the 20 credit honors degree or a maximum of 20 credit attempts to achieve the 15 credit pass degree. A passed course, a failed course, a replaced course, a repeated course or a course from which a student does not officially withdraw will all be considered as attempts.

To proceed to an honors degree, a student's attempted credits must not exceed credits achieved by more than three. A student in fourth-year who exceeds the maximum number of attempts may graduate with a pass degree, provided that the requirements for a pass degree have been met.

A student whose attempted credits exceed credits achieved by more than five will **not** be permitted to reregister in the University for at least one academic year. After that time, the student may apply for readmission.

### Attempts allowed for second degree

Students are allowed two attempts in addition to the number of credits required for the second degree.

### Extra courses

Students wishing to augment a regular degree program by taking extra courses because of personal interest may enrol in such courses and designate them as extra courses, not to be included in the list of attempted courses nor used for credit towards that degree if the maximum number of attempts has been exceeded.

### Replacement of grades

Prior to graduation a student may repeat a course or replace it with a departmentally approved substitute but it is not possible to replace a course once a degree has been conferred. It is the student's responsibility to inform the Office of the

Registrar of the replacement course and the course which it replaces.

#### Repeated courses

Repetition of courses passed is permitted to a maximum of two credits. Students may repeat any course only once. In all cases, the grade awarded for a repeated course will supersede the grade from the first attempt regardless of whether it is higher or lower and will be used in computing the student's cumulative grade average if it is a passing grade.

However, without prior permission of the dean, 1(alpha)00 to 1(alpha)99 courses or other courses listed as prerequisites, may not be repeated if credit has been received for higher level courses in the same subject.

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#### Degree categories

##### Honors standing terminology

**First-class:** A minimum grade average of 80 percent in all major credits and 70 percent in the non-major credits.

**Second-class:** A minimum grade average of 70 percent in all major credits and 60 percent in the non-major credits.

**Third-class:** A minimum grade average of 65 percent in all major credits and 60 percent in the non-major credits.

To proceed to year 4 (as an honors degree candidate), a student must have obtained at least second-class honors standing in 15 credits and must have departmental approval. Applications are available in the Office of the Registrar and should be submitted by July 1.

##### Standing for graduation

Four classes of Bachelor's degrees are awarded.

**First-class honors degrees** are granted to students who have completed a 20 credit program with first-class honors standing. A transfer student must have a minimum of five Brock credits, including all the departmental year 4 honors requirements, with a cumulative overall

average of 75 percent or better and a cumulative major average (based on Brock courses only) of 80 percent or better.

**Second-class honors degrees** are granted to students who have completed a 20 credit program with second-class honors standing. A transfer student must have a minimum of five Brock courses, including all the departmental year 4 honors requirements, with a cumulative overall average of 65 percent or better and a cumulative major average (based on Brock courses only) of 70 percent or better.

An honors degree student who does not achieve second-class honors standing upon the completion of 20 credits may graduate with a pass degree, provided that the requirements for a pass degree have been met.

**Pass degrees with distinction** are granted to students who have completed a 15 credit program with a minimum overall average of 75 percent. Transfer students require, in addition, an overall average of 75 percent in all Brock courses (see Degree requirements, page 31).

**Pass degrees** are granted to students who have completed a 15 credit program with a cumulative grade average of 60 percent or better.

##### Withholding of degree or grades

Final grades may be released only by the Office of the Registrar. No student owing the University fees or fines will receive a degree or certificate or a statement of final grades or have any such statements communicated to parties outside the University, until such time as the debts have been cleared to the satisfaction of the University.

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##### Application for graduation

Application for graduation at Fall Convocation must be received in the Office of the Registrar by August 1. Application for graduation at Spring Convocation must be received in the Office of the

Registrar by March 1. These are fixed dates. If these dates fall on a Saturday or Sunday, the closing is 4:30 p.m. the next working day.

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##### Holding of two degrees

An individual may hold only one BA or BSc (at the pass level), BEd, BPhEd, BRLS, BAcc or BBA degree and may not hold two degrees which contain an area of concentration in common (e.g., it is not possible to hold both a BBE and a BA in Economics).

A student who wishes to hold different undergraduate degrees (e.g., BA and BPhed) must:

- i) fulfil all the course requirements for each degree; and
- ii) have taken at least the number of courses indicated below.

For an honors BA, BAcc, BBA, BPhEd, BRLS or BSc and an honors degree with a different major, 30 credits.

For a pass BA, BBE, BPhEd, BRLS or BSc and a different pass degree, 20 credits.

For a pass BA, BBE, BPhEd, BRLS or BSc and a different honors degree, 25 credits (see note above).

For a pass BSc in Computer Science in addition to a BBA (Computer Science option), three additional COSC credits must be included in the additional five credits required.

*Note:* it is not possible to hold both a BAcc and a BBA degree.

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##### Certificate programs

For persons wishing to acquire specialized knowledge without proceeding immediately to a degree, the University has established certificate programs in Public Administration and Urban and Envi-

## Academic Programs and Regulations

ronmental Studies. Since the programs are composed of degree credit courses, admission requirements are the same as for degree programs. A certificate is awarded on the successful completion of an approved program with a cumulative grade average of 70 percent over the number of credits required for the certificate program. Details appear in the relevant departmental entries of the Calendar.

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### Holding of a degree and a certificate

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To hold both a degree and a certificate, a student must:

- i) fulfil the course requirements for both the degree and the certificate; and
- ii) have completed 18 credits for a pass degree and certificate or 23 credits for an honors degree and certificate; and
- iii) not have exceeded 21 attempts for a pass degree and certificate or 24 attempts for an honors degree and certificate.

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### Academic program advising

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Academic advising for both full-time and part-time students is available in the Office of the Registrar as well as in academic departments and from the deans.

Applicants for admission who have questions regarding their programs, admission procedures or current admission status should consult the Associate Director, Admissions or the Admissions officer.

Students currently enrolled at Brock who have questions regarding courses, programs or academic regulations should consult the Supervisor, Student Academic Services. Evening appointments can be arranged for part-time students.

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### Auditor status

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Persons wishing to attend classes for interest only may be permitted to do so as auditors (listeners) upon payment of the required fee at the time of registration. It is not necessary for auditors to have the normal qualifications for admission to the University, but they must make application and be formally admitted prior to registration. Not all courses are available to auditors; the instructor's approval is required prior to registration. No credits will be granted for audited courses. A request to change from audit status to degree credit status must be received by the Office of the Registrar prior to the last day for course changes. For approval, the student would need to already hold the appropriate academic qualification as shown by documentation on file in the Office of the Registrar. Degree credit students may drop to audit status prior to the final date for withdrawal without academic penalty for the course.

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### Letters of permission

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To take a course at another university for credit towards a Brock degree, a student must apply for and be granted a letter of permission from the Office of the Registrar before registering at the other university. Application for the letter of permission must include a calendar description of the course(s) to be taken and a the letter of permission application fee. Normally, permission to take a course on a letter of permission is restricted to students who have successfully completed five credits at Brock with a minimum overall average of 60 percent. If the request is approved, the Office of the Registrar will send a letter of permission to the host university and a copy to the student.

It is the **student's responsibility** to send to the Brock Office of the Registrar an official transcript of grade(s) from the host university at the earliest possible date. Upon receipt of the transcript, the final grade (rounded to comply with Brock University's 0, 2, 5, 8 marking

scheme) will be entered on the student's record at Brock. Such credits will be included in averages and will be counted as course attempts. Failure to provide an official transcript will result in a grade of 00F being assigned to the course. A student who does not complete registration or who withdraws from a course for which a letter of permission has been issued must notify the Office of the Registrar by submitting verification from the host university.

Except with the permission of the Committee on Petitions and Appeals, a letter of permission is not issued for a student to take more than two of the last five courses elsewhere.

Students completing their last credit(s) on letters of permission in Fall/Winter Sessions may apply to graduate at the following Fall Convocation and students completing their last credit(s) on letters of permission in Spring or Summer Sessions may apply to graduate at the following Spring Convocation (see page 37).

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### Challenge for credit

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Challenge for credit is designed to provide credit at the undergraduate level for skills acquired through learning and experience outside the University. It is not designed to give credit for skills or knowledge gained through high school, college or previous university instruction, nor is it expected that time would be required to upgrade or review the material prior to the examining process. Credit can only be granted for those courses listed in the current Brock calendar. Not all courses in all disciplines are available for challenge. A list is available at the Office of the Registrar. It is the responsibility of the department concerned to evaluate the student who challenges for credit and to determine the types of work to be submitted.

The following general regulations apply:

- (a) Challenge for credit is available only to students formally admitted to and registered in, a

program leading to a degree or certificate. Special students are not eligible to challenge for credit.

- (b) A maximum of five credits towards a Brock undergraduate degree may be acquired by challenge at Brock or elsewhere. A maximum of two credits may be obtained toward a certificate. Challenges may not be included in the minimum number of Brock credits required for a Brock degree (see page 31).
- (c) A challenge credit may not be used as a substitute for grade raising or special examinations or to replace a failed course.
- (d) A student may not challenge a course in which s/he is or has been previously registered or which s/he has already challenged.
- (e) The passing grade for a challenge will appear on the transcript as CH. Challenge grades therefore are not computed in averages and are not used in evaluating honor or scholarship standing, but are counted as course attempts. Failures (F) will be noted on the transcript.
- (f) A student may not withdraw the challenge once registration for a challenge course is completed.
- (g) The grade for the challenge must be received in the Office of the Registrar within 60 days of acceptance of the challenge by the department.

**How to challenge for credit:**

A student must fill out a challenge application form available in the Office of the Registrar. (The student may wish to discuss the challenge informally with the department prior to this step.) The Office of the Registrar forwards the application to the appropriate department which must decide whether to accept the challenge. The department may require documentary material from the student or an interview before making its decision. If the department accepts the challenge, the student is eligible to register for it at the Office of the Registrar and is required to

pay the applicable fee.

A student may not withdraw the challenge after this step; failure to sit for a challenge subsequent to registration represents a failed course. It is the student's responsibility to be fully informed, prior to registration, of the time and nature of the evaluation. This may include one or more of the following: a written exam paper or papers, an essay or essays, the submission of a substantial body of work or a portfolio, an oral examination or a laboratory test.

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**Petitions and appeals**

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Petitions and appeals are requests for University regulations and academic decisions to be set aside based on evidence supplied by the student, on compassionate grounds or because of extenuating circumstances.

Students who have a question regarding final grades should first discuss it with the instructor (they are entitled to inspect their final examination papers); departments are required to keep final examination papers for a period of six months following the date of the examinations. In the event of a severe disagreement between a student and an instructor, representation should be made to the chair of the department and, if necessary, to the Committee on Petitions and Appeals, c/o Office of the Registrar.

Formal petitions and appeals must be submitted to the Committee in writing. Specific and reasonable grounds must be provided. Failure in itself is not a valid reason for an appeal. An appeal of an academic decision (a grade or standing in a program) must be accompanied by a \$10 fee, which will be refunded if it is granted. The appeal and fee must reach the Office of the Registrar not later than 30 days after the issuing of grades.

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**Plagiarism**

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**Definition**

Plagiarism means presenting work done

(in whole or in part) by someone else as if it were one's own. Associated dishonest practices include faking or falsification of data, cheating or the uttering of false statements by a student in order to obtain unjustified concessions.

Plagiarism is deliberate dishonesty and includes, but is not limited to, the following forms:

**Exams and tests**

- (a) Impersonation of a candidate in an exam or test.
- (b) Copying from another student or making information available to other students knowing that this is to be submitted as the borrower's own work.
- (c) Use of unauthorized material.
- (d) Submission of a take-home exam written by someone else.

**Laboratories**

- (a) Copying a laboratory report or allowing someone else to copy one's report.
- (b) Using another student's data unless specifically allowed by the instructor.
- (c) Allowing someone else to do the laboratory work.
- (d) Using direct quotations or large sections of paraphrased material in a lab report without acknowledgement.
- (e) Faking laboratory data.

**Essays and assignments**

- (a) Submission of an essay written in whole or in part by someone else as one's own.
- (b) Preparing an essay or assignment for submission by another student.
- (c) Copying an essay or assignment or allowing one's essay or assignment to be copied by someone else.
- (d) Using direct quotations or large sections of paraphrased material without acknowledgement.
- (e) Buying or selling of term papers or assignments.
- (f) Submission of the same piece of work in more than one course without the permission of the instructor.



## Academic Programs and Regulations

- (g) Submitting whole or part of a computer program with or without minor modifications as one's own.

Individual instructors of departments will point out areas of specific concern not covered above. Students are encouraged to consult instructors in case of doubt.

Plagiarism should be distinguished from co-operation and collaboration. Often students may be permitted or expected to work on assignments collectively and to present the results either collectively or separately. This is not a problem so long as it is clearly understood whose work is being presented, for example, by way of a formal acknowledgement by footnoting.

Instructors should inform students what constitutes acceptable workmanship, proper form of citation and use of sources.

### Procedures

Students shall not be penalized for suspected plagiarism. It is the responsibility of the instructor to demonstrate the accuracy of the charge.

If the instructor can document a case of plagiarism, the department chair and the registrar shall be informed. Any application for withdrawal from the course will not be processed pending the outcome of the investigation of the case. The instructor and the chair together will interview the student and attempt to discover the precise circumstances. The case will then be referred to the dean of the appropriate faculty along with any necessary observations and/or recommendations from the department. The student may choose to be accompanied to any interviews by one of the departmental student representatives.

If the dean is satisfied that a case of plagiarism has been proven, the registrar will be informed of the details. In the case of first offenders, a note will be inserted in the student's file. The transgression will be noted on the student's transcript in the case of second offenders. The nota-

tion will be removed from the transcript when the student graduates or in three years after the last registration.

### Penalties

The penalty for plagiarism or cheating on a test, exam, final exam or other assignment shall normally be zero for the piece of work. In some circumstances cheating or plagiarism could result in zero for the course. A student who allows his work to be copied will be subject to the same penalties.

Expulsion or suspension from the University are the recommended penalties for plagiarism which involves buying or borrowing a piece of academic work or another student's work. A student who lends or sells his work to another, knowing it is to be used as plagiarism, shall also normally be suspended or expelled.

Second offenders shall normally be expelled from the University.

### Appeals

All appeals relating to the charge of plagiarism, penalties assigned or notations on transcripts will be heard by the Senate Committee on Standing, Examinations and Promotions, whose judgment will be final. Appeals should be submitted in writing to the Committee, c/o the Office of the Registrar.

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### Part-time programs

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The University provides an opportunity for formal education to be continued or resumed, through part-time studies.

Part-time students must satisfy the regular admission requirements of the University. They may take courses during the Fall/Winter, Spring and Summer Sessions.

The courses given in the evening or in the summer are equivalent to their counterparts in the regular day session. Where more than one section of a course is offered, all students will write equivalent final examinations. (See examinations, page 36.)

In some cases it may be necessary for students registered in evening courses to write examinations during the day.

# Accounting and Finance

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## Officers of instruction

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### Chair

Robert Welch

### Professors

John A. Edds  
 J. Robert Hanrahan  
 Harvey Mann  
 Udayan P. Rege  
 A. William Richardson

### Associate professors

Thomas H. Barnes  
 Raafat R. Roubi  
 Robert Welch

### Assistant professors

Ian Adamson  
 James A. Butko  
 Tsai Y. Chung  
 Louis Culumovic  
 Maureen E. Donnelly  
 Frank M. Engert  
 Sandra M. Felton  
 Linda Kidwell

### Lecturer

A. William Haskin

### Instructor

Allister W. Young

### Adjunct professor

H. Donald Brown

## Accounting Co-operative Program

### Director

Allister W. Young

### Associate Director

H. Donald Brown

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## General information

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### Taro Hall 228

The Faculty of Business offers honors programs in Accounting and Business Administration.

The program in Accounting is designed for students pursuing careers in the accounting profession. The program is professionally oriented and combines a high degree of specialization in accounting along with studies in business, the social sciences, humanities, mathematics and sciences.

The program in Business Administration is designed for students pursuing careers in business and government. The program is professionally oriented and includes studies in the social sciences, humanities, mathematics and sciences.

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## Honors programs

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### Bachelor of Accounting (BAcc)

The minimum grade requirement for admission to the Accounting program is a 70 percent average on six OACs (or equivalent) including at least one English and an average of 75 percent on two OACs in mathematics. The curriculum in Accounting is offered only as an honors (four-year) program. This is a limited enrolment program. On successful completion of the program, the degree Bachelor of Accounting (BAcc) is awarded. The BAcc program is offered as a regular four-year program and on a co-operative work/study basis.

The requirement for graduation is a minimum grade average of 70 percent in all ACTG, ENTR, FNCE, MGMT, MKTG, OBHR credits and all other required major credits and a grade average of 60 percent in the remaining credits. In accordance with academic regulations, each student will be allowed a maximum of 23 credit attempts to achieve the 20 credit honors degree.

## Accounting co-operative program

The Co-op program is fully accredited by the Institute of Chartered Accountants of Ontario. Students work in a wide variety of locations throughout Ontario. The program scheduling combines academic and work terms over a four and one-half year period. Students must register with the Institute of Chartered Accountants of Ontario on a conditional basis at the beginning of the first work period. CA students must accumulate a minimum of thirty months work experience, six months of which must follow the completion of the BAcc degree.

Admission to the Co-op program is on the basis of marks and a review of personal résumés. The basic requirement is an average of 80 percent or more on six OACs (or equivalent) including English and two OACs in mathematics with an average of 75 percent. Promising students with lower grades may be accepted. For additional information, prospective students should contact the director. Students should take courses in the order prescribed below. In addition to the current fees for courses in academic study terms, Co-operative Accounting students are assessed an annual administrative fee (see the Schedule of Fees).

### Bachelor of Business Administration (BBA)

The minimum grade requirement for admission to the Business Administration program is a 70 percent average on six OACs (or equivalent) including English and two OACs in mathematics with an average of 65 percent. The curriculum in Business is offered only as an honors (four-year) program. On successful completion of the program, the degree of Bachelor of Business Administration (BBA) is awarded.

The requirement for graduation is a minimum grade average of 70 percent in all ACTG, ENTR, FNCE, MGMT, MKTG, OBHR credits and all other required major credits and a grade average of 60 percent in the remaining credits. In accordance with academic regulations, each student will be allowed a maximum of 23 credit attempts to achieve the 20 credit honors degree.

## Accounting/Finance

### Periodic review of eligibility to continue

The eligibility of each student to continue in the Faculty of Business honors programs will be reviewed when the student has attempted three or more credits since the previous review.

Eligibility to continue is based on the student's major credit average and non-major credit average.

i.) A student with a major average of at least 70 percent and a non-major average of at least 60 percent, will be permitted to continue.

ii.) A student with a major average lower than 66 percent will **not** be permitted to continue.

iii.) Any student with averages that do not fit into categories (i) or (ii) above, will be permitted to continue, but will be informed by letter that both a major average of at least 70 percent and a non-major average of at least 60 percent, must be achieved on or before the date of the next review.

The program requirements are:

### Bachelor of Accounting

#### Year 1

ACTG 1P11, 1P12, 1P71; ECON 1P91, 1P92; ENGL 1P97, 1P98; MGMT 1P95; MATH 1P97, 1P98.

#### Year 2

ACTG 2P21, 2P31, 2P32; ECON 2P23; FNCE 3P92, 3P93; POLI 2P62; MATH 2P60; science context credit.

#### Year 3

ACTG 3P11, 3P22, 3P23, 3P33; MGMT 3P39; MKTG 3P29; OBHR 3P41; PHIL 2P82; POLI 3P50; one-half elective credit.

#### Year 4

ACTG 4P11, 4P12, 4P34, 4P41, 4P42; one elective credit; and for Program A\*: ACTG 4P61, 4P62; MGMT 4P89; for Program B\*: ACTG 4P63; MGMT 4P85, 4P86.

\*In year 4 of the program there are two streams. Program A requirements are designed for students pursuing the CA designation after graduation. Program B requirements are designed for students pursuing the CMA designation after graduation. Students interested in the CGA designation should consult the chair of the Accounting and Finance department.

### Bachelor of Business Administration

All BBA students are required to take a number of core courses. All students should take the courses in the order prescribed below. In year 3, students select one of the optional areas. No student may take more than two of ACTG 4V90-4V99, FNCE 4V90-4V99, MGMT 4V90-4V99, MKTG 4V90-4V95, OBHR 4V90-4V99. Please consult the chair of the appropriate department for details.

#### Year 1

ECON 1P91, 1P92; MGMT 1P91, 1P92; MATH 1P60, 1P97; POLI 1F90; one science or humanities context credit.

#### Note:

Students having two or more OAC mathematics credits with an average mark of at least 75 percent may be exempted from MATH 1P60. Students should consult the Department of Mathematics. ECON 2P90, MATH 2P60 or any other ACTG, ENTR, FNCE, MGMT, MKTG, OBHR half credit course in proper sequence must be substituted for MATH 1P60.

#### Year 2

ACTG 2P11, 2P12; ECON 2P23; MGMT 1P95, 2P40; one-half credit from ENTR 2P91, FNCE 2P95, MGMT 2P82; MATH 1P98; MATH 2P60 or ECON 2P90; one science or humanities context credit (whichever was not taken in year 1).

#### Note:

In the Business Administration program, MGMT 1P91, 1P92 are prerequisites for all BBA courses except MGMT 1P95, 2P40 and 2P82. MGMT 1P95 is a required course for BBA and BAcc programs. ACTG 2P11 is a prerequisite for ACTG 2P12 and all other courses in

Business Administration numbered 2(*alpha*)90 or above. Students planning to take upper-level ECON courses should consult the Department of Economics before selecting elective courses.

In year 3 of their studies, students in Business Administration may concentrate their courses in various disciplines or functional areas of business. These are listed below as 'options'.

### Accounting

#### Year 3

FNCE 3P92, 3P93; MGMT 3P30; MKTG 3P22, 3P24; OBHR 3P41, 3P42; POLI 3P50; one non-accounting elective credit numbered 2(*alpha*)00 or above.

#### Year 4

ACTG 2P21, 2P31, 2P32, 3P11, 3P22, 4P41; MGMT 4P85, 4P86; one-half credit numbered 2(*alpha*)00 or above; one-half elective credit numbered 3(*alpha*)90 or above.

#### Note:

Students will not be able to fulfil all of the prerequisites for professional designations within this program.

### Finance

#### Year 3

FNCE 3P92, 3P93; MGMT 3P30; MKTG 3P22, 3P24; OBHR 3P41, 3P42; POLI 3P50; one elective credit numbered 2(*alpha*)00 or above.

#### Year 4

FNCE 4P02, 4P06; one and one-half credits in FNCE at the 4(*alpha*)00 level; MGMT 4P85, 4P86; one-half credit in ACTG, ENTR, FNCE, MGMT, MKTG, OBHR; one elective credit numbered 2(*alpha*)00 or above.

For the following options, see the Department of Management, Marketing and Human Resources:

General Management, Human Resource Management, Marketing, Public Administration, Quantitative Analysis.

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### Bachelor of Business Administration for students holding other degrees

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Students holding a university degree where the major area of concentration is other than Business and with an overall average of at least 70 percent may be admitted and receive ten unspecified credits towards the BBA degree at Brock. These students will be required to complete the following program.

ECON 1P91, 1P92; MGMT 1P95; MATH 1P98; ACTG 2P11, 2P12; FNCE 3P92, 3P93; MGMT 3P30; MKTG 3P22, 3P24; OBHR 3P41, 3P42, 4P85, 4P86; two and one-half credits in ACTG, ENTR, FNCE, MGMT, MKTG, OBHR numbered 2(*alpha*)00 or above (at least one credit should be 3(*alpha*)90 or above).

Students who are granted credit in any of the above courses must complete a program consisting of at least ten credits that includes the core courses above and substitute courses approved by the Faculty.

Students will normally enter the program in September. Applications for admission must be received at least two months before the program begins.

For graduation a minimum overall grade average of 70 percent is required in the approved program courses.

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### Combined honors programs

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Combined honors programs leading to an honors Bachelor of Arts degree are available in Business Administration and Economics and Business Administration and Politics. For a description of these programs, see the Department of Management, Marketing and Human Resources.

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### Bachelor of Business Economics

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See separate calendar entry under Business Economics.

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### Non-BBA, BAcc, combined honors majors

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Students in other disciplines who wish to enrol in credit courses in Business should select from the following approved courses: ACTG 2P11, 2P12, all ENTR courses, FNCE 2P92, 2P93, 2P95, MKTG 2P96, 2P97, MGMT 1P91, 1P92, 2P30, 2P40, 2P82, 3P81, OBHR 3P41, 3P42.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

#### ACTG 1P11

##### Introduction to accounting I

The nature and role of accounting information for planning, decision making, control and external reporting by businesses and other economic organizations.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to students admitted to the BAcc program and to BAcc majors.

Credit will not be granted to students who have prior credit in ACTG 2P11.

#### ACTG 1P12

##### Introduction to accounting II

A continuation of ACTG 1P11 with em-

phasis on the application of various accounting concepts to generate information for a variety of purposes.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to students admitted to the BAcc program and to BAcc majors.

Prerequisite: ACTG 1P11.

#### ACTG 1P71

##### The legal environment of business

The Canadian legal system as it affects the modern business environment, in particular the accounting professional. Topics include: financial disclosure and audit requirements, corporate finance and securities, corporate capacity and agency and professional liability for negligence and other business torts.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to students admitted to the BAcc program and to BAcc majors.

Credit will not be granted to students who have prior credit in MGMT 2P40 or ADMI 240hc.

#### ACTG 2P11

##### Introduction to financial accounting

The fundamental concepts of financial accounting as related to the balance sheet, income statement and statement of changes in financial position. A study of the problems of income determination, asset and equity measurements and analysis of financial statements.

*Lectures, 3 hours per week.*

Restriction: Open only to students admitted to the BBE program and to the BBE, BBA and combined Business majors until dates specified in BIRT guides.

Credit will not be granted to students who have prior credit in ACTG 2P53, ADMI 253hc or ACTG 1P11.

#### ACTG 2P12

##### Introduction to management accounting

Accounting for managerial decision making, including relevant data, various cost accounting systems and break-even analysis.

*Lectures, 3 hours per week.*

Restriction: Open only to students admitted to the BBE program and to the BBE, BBA and combined Business majors until dates specified in BIRT guides.

## Accounting/Finance

Prerequisite: ACTG 2P11.  
Credit will not be granted to students who have prior credit in ACTG 2P54, ADMI 254hc or ACTG 1P12.

### ACTG 2P21 Accounting for planning and control I

Internal recording systems devised to implement and guide management planning and control with particular emphasis on cost finding, product costing, cost behavior and cost allocations.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 1P12 or 2P12.

Credit will not be granted to students who have prior credit in ACTG 3P55 or 3P60

### ACTG 2P31

#### Accounting for external reporting I

The theory and practice of financial statement preparation including the measurement, reporting and disclosure of assets, liabilities, equity, revenue and expenses with specific reference to generally accepted accounting principles.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 1P12 or 2P12.

Credit will not be granted to students who have prior credit in ACTG 3P56.

### ACTG 2P32

#### Accounting for external reporting II

A continuation of ACTG 2P31; the theory and practice of financial statement preparation in accordance with generally accepted accounting principles.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 2P31.

### ACTG 3P11

#### Auditing concepts

The underlying concepts of auditing including the nature of verification, audit evidence, testing, the elements of effective

control structures, the use of statistical sampling and evolution of external, internal and comprehensive auditing.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 3P22 or permission of the instructor.

Credit will not be granted to students who have prior credit in ACTG 3P53.

### ACTG 3P22

#### Accounting for planning and control II

The role of accounting information systems within the context of a management information system with emphasis on the design and implementation of systems and controls.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 2P21 or permission of the instructor.

Credit will not be granted to students who have prior credit in MGMT 4P12.

### ACTG 3P23

#### Accounting for planning and control III

Topics in accounting for planning and control such as performance evaluation, divisional performance measurement, transfer pricing, behavioral implications of accounting information and current issues.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 3P22.

Credit will not be granted to students who have prior credit in ACTG 3P55 or 4P60.

### ACTG 3P33

#### Accounting for external reporting III

A continuation of ACTG 2P32; the theory and practice of financial statement preparation in accordance with generally accepted accounting principles.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 2P32.

### ACTG 4P11

#### Accounting theory

An enquiry into the mathematical, economics and behavioral foundations of accounting theory including the need for and development of standards, a conceptual framework, alternatives to present accounting models and current issues.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 3P33 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in ACTG 4P53.

### ACTG 4P12

#### Integration and problem solving

Problem solving integrating the sub-disciplines of accounting in the context of a wider view of organizations through the examination of a variety of applied and theoretical issues.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisites: ACTG 3P23, 4P34 (may be taken concurrently) or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in ACTG 4P65.

### ACTG 4P34

#### Accounting for external reporting IV

A continuation of ACTG 3P33; the theory and practice of financial statement preparation in accordance with generally accepted accounting principles with emphasis on accounting for complex business organizations and not-for-profit organizations.

*Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 3P33 or consult the

instructor for permission to register. Credit will not be granted to students who have prior credit in ACTG 4P52.

#### ACTG 4P41

##### Taxation I

The principles underlying federal income tax in Canada through an analysis of the Income Tax Act, R.S.C., as amended, including the computation of net income for tax purposes, taxable income and tax payable by an individual. *Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 1P12 or 2P12 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in ACTG 4P55.

#### ACTG 4P42

##### Taxation II

A continuation of ACTG 4P41 including the determination of federal income taxes payable by a corporation and the tax implications of changes in corporate structures, corporate distributions and rollovers and shareholder, owner remuneration. *Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 4P41 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in ACTG 4P56.

#### ACTG 4P61

##### External auditing I

The role and nature of the financial statement audit including the professional and legal responsibilities of the auditor, generally accepted auditing standards, risk, materiality and the planning and execution of the audit. *Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 3P11 or consult the instructor for permission to register.

#### ACTG 4P62

##### External auditing II

A continuation of ACTG 4P61 with emphasis on the completion of the audit, evaluation of results, audit reports, review engagements and current topics. *Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 4P61 or consult the instructor for permission to register.

#### ACTG 4P63

##### Management auditing

The role of internal auditors in industry and government with emphasis on the establishment and appraisal of administrative and operational controls and the evaluation of the effectiveness and efficiency of various enterprise functions. *Lectures, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors until dates specified in BIRT guides. On and after these dates, open only to BBA and combined Business majors.

Prerequisite: ACTG 3P11 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in ACTG 4P54.

#### ACTG 4P91

##### Research topic

Directed intensive study or research under the supervision of a faculty member in an area in which the student has shown particular competence. To be chosen in consultation with the supervising faculty member.

Restriction: Open only to BAcc, BBA and to combined Business majors with a minimum of 13.5 overall credits and with either a major average of 70 percent or approval to year 4.

Credit will not be granted to students who have prior credit in ADMI 490hc, 491hc.

#### ACTG 4V90-4V99

##### Topics in accounting

A course structured by a faculty member having specialized interest in an area within the discipline. This course is normally offered on an experimental basis. *Lectures, seminar, discussion, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

#### FNCE 2P92

##### Introduction to finance I

The finance function in the business environment is introduced. Criteria used in making investment decisions; risk concepts and the valuation of assets. Specific topics include: financial analysis, forecasting and leverage; the theory of interest; valuation and capital budgeting. *Lectures, seminar, 3 hours per week.*

Restriction: Open only to BBE majors until date specified in BIRT guide.

Note: Not open to BBA or BAcc majors. Credit will not be granted to students who have prior or concurrent credit in ADMI 392hc or FNCE 3P92.

#### FNCE 2P93

##### Introduction to finance II

Criteria used in financing decisions. Specific topics include: the cost of various sources of capital, hybrid securities, capital structure, dividends and leasing. *Lectures, seminar, 3 hours per week.*

Restriction: Open only to BBE majors until date specified in BIRT guide.

Prerequisite: FNCE 2P92 or FNCE 3P92.

Note: Not open to BBA or BAcc majors. Credit will not be granted to students who have prior or concurrent credit in ADMI 393hc or FNCE 3P93.

#### FNCE 2P95

##### Personal financial planning

Personal financial planning concepts and principles. Topics include: assessment of financial worth; analysis of financial products and services; generation of investment alternatives; relevant regulations. Development of financial planning and techniques and practices. *Lectures, seminar, cases, 3 hours per week.*

Note: Enrolment limited to 70 students.

#### FNCE 3P92

##### Corporate finance I

Introduction to the role of the finance function in the private and public sectors. Techniques of financial analysis. Investment in current assets. Capital budgeting, valuation, risk and return. *Lectures, seminar, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

Prerequisites: ACTG 1P11 or 2P11, ECON 1P91, 1P92, MATH 1P98.

## Accounting/Finance

Credit will not be granted to students who have prior or concurrent credit in ADMI 392hc or FNCE 2P92.

### FNCE 3P93

#### Corporate finance II

Cost of capital, capital structure and dividend policy. Analysis of long- and short-term financing decisions. Introduction to options and futures. Mergers and acquisitions.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

Prerequisite: FNCE 3P92.

Credit will not be granted to students who have prior or concurrent credit in ADMI 393hc or FNCE 2P93.

### FNCE 4P02

#### Corporate financial policy

This case course builds on FNCE 3P92, 3P93. Students are provided with an opportunity to develop further and apply their understanding of the material in FNCE 3P92, 3P93 to situations encountered in a variety of business decision settings.

*Seminars, case discussion, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

Prerequisite: FNCE 3P93 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in ADMI 402hc.

### FNCE 4P04

#### Investment analysis and portfolio management

A synthesis of theoretical finance and the art of investing in a Canadian environment. Theoretical and practical valuation models for individual securities are reviewed within a framework of market efficiency, portfolio theory and capital market theory. Portfolio construction timing and performance evaluation are included.

*Lectures, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

Prerequisite: FNCE 3P93 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in ADMI 404hc.

### FNCE 4P05

#### International finance

Alternate solutions to the problems encountered by a financial manager in a multinational company are explored. To this end, the spectrum of business, foreign exchange and political risks confronting such organizations are cast in the context of the economic and legal tools and institutions through which management conducts international operations.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

Prerequisite: FNCE 3P93 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in ADMI 405hc.

### FNCE 4P06

#### Financial theory

The theoretical basis for the financial decisions of individuals and business firms is explored. Of particular interest are those decisions involving the valuation of fixed assets and marketable securities. These and related decisions are reviewed under conditions of certainty and uncertainty and in the context of perfect and imperfect capital markets.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

Prerequisite: FNCE 3P93 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in ADMI 406hc.

### FNCE 4P07

#### Financial market analysis

Managerial approach to the nature and functions of financial markets is developed. The impact of inflation and flow of funds on interest rate mechanism is analyzed. The criteria for efficient financial markets are applied to money, capital, securities, commodities and currency markets.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

Prerequisite: FNCE 3P93 or consult the instructor for permission to register.

### FNCE 4P08

**Management of financial institutions**  
Managerial in focus, the course covers

the process of financial intermediators. Organizational structures, operating practices and regulatory requirements of various types of financial institutions in Canada are examined. Managerial aspects associated with savings, credit, liquidity, assets, liabilities and capital problems of financial institutions are discussed. Financial planning and strategy formulation for financial institutions are also covered.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

Prerequisite: FNCE 3P93 or consult the instructor for permission to register.

### FNCE 4P11

#### Options

Theoretical formulations and empirical studies of investments in options and their markets. Some institutional background is covered, but most of the course focusses on pricing principles of options and their practical applications.

*Lectures, cases, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

Prerequisite: FNCE 3P93 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in FNCE 4P10.

### FNCE 4P12

#### Futures

The importance of futures in financial markets. The volume of transactions and the introduction of new instruments on foreign exchange, interest rates, stock indexes and options on futures have created new investment opportunities. Pricing theory, practical applications and empirical research in futures.

*Lectures, cases, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: FNCE 3P93.

### FNCE 4P15

#### Advanced topics in financial theory

Theoretical concepts from FNCE 4P06 are extended to include capital structure, dividend policy, leasing and mergers. Computer applications of theory to empirical data may be included.

*Lectures, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

Prerequisite: FNCE 4P06.

FNCE 4P91

**Research topic**

Directed intensive study or research under the supervision of a faculty member in an area in which the student has shown particular competence. To be chosen in consultation with the supervising faculty member.

Restriction: Open only to BAcc, BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Credit will not be granted to students who have prior credit in ADMI 490hc, 491hc.

FNCE 4V90-4V99

**Topics in finance**

A course structured by a faculty member having specialized interest in an area within the discipline, normally offered on an experimental basis.

Restriction: Open only to BAcc, BBA and combined Business majors.



# Applied Language Studies

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## Officers of instruction

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### *Chair*

Hedy M. McGarrell

### *Professor*

John N. Sivell

### *Associate professor*

Glenwood H. Irons

### *Assistant professor*

Hedy M. McGarrell

### *Sessional lecturers*

Jean Black

Patricia E. Brillinger

Pamela Gifford

Lisa G. Mayer

### *Director of non-credit programs*

Jackie Cleland

### *Housing Co-ordinator*

Marina Pieneman

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## General information

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*Mackenzie Chown, A242*

The Department of Applied Language Studies offers degree programs leading to honors and pass degrees in general linguistics and the BEd in teaching English as a second language.

The department also offers courses in language pathology, Oriental languages and English as a second language.

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## General linguistics

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General linguistics at Brock examines the structure of language and its role in communication. The department's focus is on language as children acquire it, as

the product of cultures and social groups and as the medium through which human communication most often occurs.

A background in linguistics is essential for language teachers, translators and rehabilitative language instructors and a host of other language professionals. It is particularly useful for prospective teachers of English and/or French as a second language.

The objective of the pass program in general linguistics is to provide background for the analysis of language. Along with the introductory courses (LING 1F91 and 1F94), there is a core of courses which focus on phonology, syntax, culture, ethnography and discourse analysis and elective courses which examine first-language development, language and gender, language and pathology and teaching English as a second language.

Students proceeding towards a BA in linguistics may complete a combined major in conjunction with one other humanities, social science or science department or may proceed towards a single major.

Students interested in a career and/or postgraduate program in language pathology should be careful to select those electives which will prepare them for such an option. For more information, see below under recommended courses for further study in speech-language pathology.

Following the completion of the BA in general linguistics, students may take courses leading to a BEd TESL degree, which offers theoretical and practical training in the teaching of English as a second language or an honors BA which offers a concentration in either linguistics or language pathology.

Students interested in teaching language in the Ontario school system should consult the Ministry of Education guidelines. In those guidelines, "Language Courses" mean English or any teachable (modern language) subject.

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## Teaching English as a second language

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The Brock BEd in teaching English as a second language (TESL) includes the study of theories of second language instruction, particularly as they relate to listening, speaking, reading and writing in a second-language. In the methods course (TESL 4F04), students apply TESL and linguistics theory to the practical problems of teaching English as a second language in the classroom, under the direct supervision of instructors from the department.

TESL courses at the year 4 level are for credit towards the BEd degree only, while LING courses are credited towards the BA degree.

Students already holding a relevant BA degree may be accepted into the BEd TESL program. In some cases, additional courses may be required.

TESL courses do not lead to Ontario Ministry of Education certification to teach in the province of Ontario. Students who desire Ministry of Education certification to teach in the province of Ontario should consult the Faculty of Education calendar entry for the Program I BEd degree.

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## Language requirement for humanities majors

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General linguistics majors are required to complete one credit in a language other than English. Where half credit courses are used to satisfy the requirement, both half credits must be in the same language. The selection of non-Indo-European language courses (such as Chinese or Japanese) is recommended.

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**Single major**

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**Honors program**

*Year 1*

LING 1F91; LING 1F94; science and humanities context credits; one elective credit.

*Year 2*

LING 2P50, 2P51; LING 2F60; one credit from LING 2F80, 2F90, 2F95; two elective credits.

*Year 3*

LING 3F92; 3F94; one credit from LING 3F98, 3F99, 3M80-3M99, ENGL 3F91; two elective credits (CLAS 3P93 strongly recommended).

*Year 4*

LING 4F01, 4F02, 4F03; two elective credits.

**Pass program**

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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**Combined major**

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**Honors program**

*Year 1*

LING 1F91, 1F94; one credit from co-major discipline; two elective credits.

*Year 2*

LING 2F60, 2P50, 2P51; two credits from co-major discipline; one elective credit.

*Note:*

Context credits must be completed within the first ten credits.

*Year 3*

Two credits from LING 3F92, 3F94, 3F98, 3M80-3M99; two credits from co-major discipline; one elective credit.

*Year 4*

LING 4F01, 4F02, 4F03; two credits from co-major discipline.

**Pass program**

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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**BEd program**

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LING 3F98; TESL 4F01, 4F02 (or 4F98); 4F03, 4F04, 4F05.

**Recommended courses for students interested in a career in speech-language pathology (consult the department).**

BIOL 1F25, 2P97, LING 2F90, 2F95, 3F99, PSYC 1F90, 2F20, 2F23, 2F36, 3F08, 3F91, 3F96, 3P11, 3P18, 3P19, 3P93, 3P98.

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**Prerequisite and restrictions**

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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**Description of courses**

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

LING 1F91

**Introduction to language and language pathology**

Various contemporary theories of normal and abnormal language acquisition and learning. Topics include: neurological, psychological, cultural and pathological factors.

*Lectures, seminar, 3 hours per week.*

Note: This course is of interest to students in education, behavioral and social sciences, to health professionals and to students intending to pursue subsequent professional training in speech-language pathology or audiology. Credit will not be granted to students who have prior credit in APLI 1F91.

LING 1F94

**Introduction to general linguistics**  
(also offered as COMM 1F94)

A study of phonetics, phonology, morphology, syntax and the lexicon; their evidence in language use; differences between human language and communication systems; classification of human languages; linguistic family trees. Topics and questions relevant to Indo-European and non-Indo-European languages. *Lectures, seminar, 3 hours per week.*

Note: Open to students in any year of study.

Credit will not be granted to students with prior credit in TESL 1F94.

LING 2F60

**Introduction to the analysis of grammar**

Frameworks for grammatical analysis, their basic principles and aims. Focus on selected frameworks influential in 20th century linguistics; outline of their relationship to semantic theories. Focus on English, but examples from other languages are used.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 1F94.

Credit will not be granted to students with prior credit in TESL 2F60.

LING 2F80

**Gender differences in language and language use**

(also offered as WISE 2F80)

Gender in the structure and use of language at different levels of linguistic analysis (speech style/pronunciation, vocabulary, sentence construction, discourse). Examples from English as well as a wide range of other languages. Discussion of selected cultural variables and their relationship to language.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students with prior credit in TESL 2F80.

## Applied Language Studies

### LING 2F90

#### Child language acquisition

(also offered as CHST 2F90)

Linguistic stages in the development of child language. The milestones of sound system development and the development of "grammar". Topics include: "Parent speak", social class and language development, pre-school and institutional language development and child L<sub>2</sub> acquisition and its effect on L<sub>1</sub>.

*Lectures, seminar/lab 3 hours per week.*

Prerequisite: LING 1F94 or PSYC 1F90 or permission of the chair.

Credit will not be granted to students with prior credit in TESL 2F90 or APLI 2F90.

### LING 2F95

#### Speech-language pathology and audiology

Disorders of human communication (speech-language and voice during the first term; audiology during the second term); clinical disorders from the newborn to the aged; approaches to assessment and remediation.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 1F91 or permission of the chair.

Note: This course is of interest to students in education, behavioral and social sciences, to health professionals and to students intending to pursue subsequent professional training in speech-language pathology or audiology.

Credit will not be granted to students with prior credit in EXST 2F95.

### LING 2P50

#### Phonology and phonetics

(also offered as FREN 2P50)

Phonological and phonetic features of the English and French languages including: speech physiology, articulation, segmental and suprasegmental classifications; lab exercises in transcription, production and auditory discrimination.

*Lectures, lab, 3 hours per week.*

Prerequisite: LING 1F94 or FREN 1F90. Credit will not be granted to students with prior credit in APLI, FREN or TESL 2F50.

### LING 2P51

#### Applications of phonetics and phonology

Techniques for the analysis of the production of speech sounds. Special emphasis on the use of transcription skill in the analysis and description of the speech sound of second-language speakers, young children and phonologically impaired speakers of first and subsequent languages.

*Lectures, lab, 3 hours per week.*

Prerequisite: LING 2P50 or FREN 2P50.

Credit will not be granted to students with prior credit in APLI, FREN or TESL 2F50.

### LING 2P52

#### Applications of French phonetics

(also offered as FREN 2P52)

Transcription skills in the comparative analysis and description of the speech of Canadian and standard French and English speakers. Focus on assimilation, consonantal liaison, syllabic rhythm and accent, intonation and pedagogical contexts.

*Lectures, lab, 3 hours per week.*

Prerequisite: LING 2P50 or FREN 2P50.

Credit will not be granted to students with credit in APLI, FREN or TESL 2F50.

### LING 3F92

#### Socio-linguistics

Language in its social context. Relation to culture, geographic origin, social class, age, ethnicity, gender. Bilingualism and linguistic variation.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 1F94 or permission of the chair.

### LING 3F94

#### Discourse analysis

Various techniques and frameworks for the analysis of written and spoken discourse, both casual and formal. Introduction to more text-based as well as more socially-oriented approaches to discourse analysis. Preparation of at least one practical project in discourse analysis.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 1F94 or permission of the chair.

Credit will not be granted to students with prior credit in TESL 3F94 or 4F00.

### LING 3F98

#### Introduction to second-language acquisition and learning

Theories of second or subsequent language learning. Topics include: language and culture, contrastive analysis, error analysis and contemporary methods of language instruction.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students with prior credit in TESL 1F91.

### LING 3F99

#### Speech production and psychoacoustics

Human speech production and hearing. Introduction to basic principles and psychoacoustics.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 1F94.

### LING 3M80-3M99

#### Special issues in linguistics

Selected issues in the theory and/or practice of linguistics. Topics according to specific areas of instructional expertise and student interest.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 1F94 or consult the instructor for permission to register.

### LING 4F01

#### Honors thesis

A research project carried out with a faculty adviser. Students must consult the department chair regarding both their program and an adviser before being admitted to year 4.

Restriction: Open only to LING (single or combined) majors with a minimum of 14.0 credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Credit will not be granted to students with prior credit in APLI 4F01.

### LING 4F02

#### Honors seminar

Fundamental issues in diverse areas of linguistics, with one or more faculty members responsible for specific sections of the course.

*Lectures, seminar, 3 hours per week.*

Prerequisite: Open only to students with approval to year 4.

Credit will not be granted to students with prior credit in APLI 4F02.

LING 4F03

**Special topics in linguistics**

Directed readings in an area of specialization in linguistics. Topics to be arranged in advance with the faculty member supervising the course.

Restriction: Open only to LING (single or combined) majors with a minimum of 14.0 credits and with either a major average of 70 percent and a non-major average of 60 percent or approval to year 4. Credit will not be granted to students with prior credit in APLI 4F03.

*Note: TESL courses do not lead to Ontario Ministry of Education certification to teach in the province of Ontario. Students who desire Ministry of Education certification to teach in the province of Ontario should consult the Faculty of Education calendar entry for the Bachelor of Education Program I degree.*

\*\*\*TESL 4F01

**From grammar to writing in a second language**

Study of the role of grammar in second-language acquisition; theories and analyses of grammar and their relationship to ESL teaching practices; exploitation of syntactic principles in teaching methodology; study of models for writing and their implications for teaching and learning writing in ESL.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 3F98 or permission of the chair.

Co-requisite: TESL 4F02 (or 4F98), 4F03, 4F04, 4F05 or permission of the chair.

Note: Does not lead to Ministry of Education qualification to teach in the province of Ontario.

\*\*\*TESL 4F02

**Research methodology**

Qualitative and quantitative research options, with special emphasis on the study of language, language policy and language learning/acquisition.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 3F98 or permission of the chair.

Co-requisite: TESL 4F01, 4F03, 4F04, 4F05 or permission of chair.

Note: Does not lead to Ministry of Education qualification to teach in the province of Ontario.

\*\*\*TESL 4F03

**Comprehension and production in second language**

Theories and methods related to the teaching of speaking and listening comprehension. The roles of first-language comprehension and production in second-language learning. The comprehension-based approach to second-language teaching and the advantages and limits of the language lab will be discussed.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 3F98 or permission of the chair.

Co-requisite: TESL 4F01, 4F02 (or 4F98), 4F04, 4F05 or permission of the chair.

Note: Does not lead to Ministry of Education qualification to teach in the province of Ontario.

\*\*\*TESL 4F04

**Curriculum design, methodology and practicum**

Examination of the theoretical and historical factors influential in the development and practice of contemporary English as a second language (ESL) curricula; development of skill in designing new and/or adapting second-language syllabi; application of current second-language teaching approaches and methods in ESL.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 3F98 or permission of the chair.

Co-requisite: TESL 4F01, 4F02 (or 4F98), 4F03, 4F05 or permission of the chair.

Note: Does not lead to Ministry of Education qualification to teach in the province of Ontario.

\*\*\*TESL 4F05

**Reading in a second language**

Various methodologies for reading instruction. Fundamental principles and strategies for teaching and studying second-language reading. Opportunities will be provided for students to develop skills in reading assessment, instruction and evaluation. Attention will be devoted to techniques for the analysis and implementation of second-language reading programs.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LING 3F98 or permission of the chair.

Co-requisite: TESL 4F01, 4F02 (or 4F98), 4F03, 4F04 or permission of the chair.

Note: Does not lead to Ministry of Education qualification to teach in the province of Ontario.

Credit will not be granted to students who have prior credit in TESL 3F93.

\*\*\*TESL 4F98

**Independent project**

An individual, empirical project in an area relevant to teaching English as a second language. Topics must be chosen in consultation with a faculty member willing to supervise the project.

Prerequisite: LING 3F98.

Co-requisite: TESL 4F01, 4F03, 4F04, 4F05.

\*\*\*TESL course for credit towards BEd TESL only.

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**Oriental languages**

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Courses in this program are designed to introduce speaking and writing ability in Oriental languages.

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**Prerequisites and restrictions**

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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**Description of courses**

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

JAPA 1F00

**Introduction to modern standard Japanese**

Elementary conversational and written Japanese including essential grammar,

## Applied Language Studies

the *hiragana* and *katakana* syllabaries and approximately 200 *kanji* (Chinese characters). Strong emphasis on cultural knowledge and customs. Open only to students with limited or no background in the language.

*Seminar, lab, 4 hours per week.*

### JAPA 1F80

#### Practical Japanese

Basic written and oral skills in modern Japanese. Emphasis on oral and written communication skills. Intended for students with limited background in the language.

*Lectures, labs, 4 hours per week.*

Prerequisite: JAPA 1F00.

### MAND 1F00

#### Introduction to Mandarin Chinese

Elementary conversational and written Mandarin (about 1200 words, introduced through approximately 600 Chinese characters). Strong emphasis on cultural knowledge and customs. Open only to students with limited or no background in the language.

*Seminars, 3 hours per week; lab, 1 hour per week.*

### MAND 1F80

#### Practical Mandarin Chinese

Basic written and oral skills in Mandarin Chinese. Emphasis on practical communication. Intended for students with limited background in the language.

*Lecture, lab, 4 hours per week.*

Prerequisite: MAND 1F00 or consult the instructor for permission to register.

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## English as a second language

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APLS and ESLX courses are designed to enhance and develop the English speaking and writing ability of those for whom English is not a native language. Remedial English (non-credit) and skills enhancement (credit) courses are available for students with varying levels of English proficiency.

ESL students from all disciplines who are required to register in one written English and one spoken English section until

their proficiency has improved to the exemption level are also required to practise pronunciation, grammar and listening comprehension at least one hour per week in the language lab. Participants in the ESL courses are normally placed there by virtue of their scores on the placement test given in the Fall.

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## Description of courses

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### Credit courses

#### APLS 1P90

##### Advanced written English

For students who need to refine writing skills and techniques to meet standards of basic academic and professional acceptance. Only available for credit to (a) visa students whose native language is not English; (b) other students whose native language is not English and who have not attended an English-speaking high school.

*Lectures, lab, 4 hours per week.*

Credit will not be granted to students who have prior credit in EASL 143hc.

#### APLS 1P91

##### Advanced spoken English for ESL students

This course stresses the importance of seminar participation. In order to help the student properly define and evaluate the practice of communication and intonation, a study of essential idioms and academic role plays is undertaken. An awareness of and flexibility towards using appropriate communication methods in different contexts is developed through varied use of structure, vocabulary and organization. No challenges for credit will be accepted for APLS courses.

*Seminars, 3 hours per week; language lab, 1 hour per week.*

Prerequisite: score of 80 or above on the English language placement test or successful completion of level II spoken English.

Note: Only available for credit to (a) visa students whose native language is not English; (b) other students whose native language is not English and who have not attended an English-speaking high school.

Credit will not be granted to students who have prior credit in EASL 140hc.

### Non-credit (remedial) courses

The following courses are not eligible for credit toward a Brock degree.

#### ESLX 0N10

##### Level I written English for ESL students

For students whose scores on standardized tests show a definitive need for remedial written work. Students use descriptive texts to help them increase control over syntactic structures. They study basic techniques and conventions relevant to writing research papers.

*Lectures, lab, 4 hours per week.*

#### ESLX 0N11

##### Level I spoken English for ESL students

This course is designed to help the student speak in an academic context, using problematic morphological structures. The lab instructor aids the student's communicative performance through rectification of any pronunciation/comprehension/grammatical problems which lead to the production of structural errors.

*Seminars, 3 hours per week; language lab, 1 hour per week.*

#### ESLX 0N20

##### Level II written English for ESL students

For students whose writing ability may not reflect scores received on standardized tests. Students with a good grasp of basic structures of grammar and rhetoric are encouraged to expand writing skills beyond the sentence and paragraph levels. Emphasis on various writing techniques to assist students in producing a basic research paper.

*Lectures, lab, 4 hours per week.*

#### ESLX 0N21

##### Level II spoken English for ESL students

The identification and correction of phonological problems to assist students in their seminar participation. Ample opportunity is provided to practise using English as the medium of expression in

various academic or seminar-related contexts. Listening and note taking skills are emphasized in order to help the student cope with the complexities of Brock's academic environment.

*Seminars, 3 hours per week; language lab, 1 hour per week.*

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### **Intensive English Language Program (IELP)**

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The IELP provides 25 hours of English instruction per week in: grammar and writing, guided reading, spoken English and listening. This program is open to all non-native speakers who wish to improve English for academic, professional or social purposes. Inquiries should be sent to the director, non-credit programs,

# Asian Studies

*Co-ordinator*  
John R.A. Mayer

*Co-operating faculty*  
Hasan Imam, Economics  
John R.A. Mayer, Philosophy  
Josephine P. Meeker, Geography  
Robert C. Nunn, Film Studies,  
Dramatic and Visual Arts  
Joseph L. Sanders, History  
Debabrata Sinha, Philosophy  
Paul D. Tyson, Psychology

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## General information

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Asian Studies is a co-operative program of the departments of Economics, Geography, History, Philosophy, Politics and Psychology. Responsibility for its administration rests with the plenum on Asian Studies.

There is no degree program in Asian Studies at present. However, students can have a concentration in Asian Studies by including Asian Studies and Asia-related courses as electives or as part of a program in another department. In a pass program, a concentration in Asian Studies requires ASIA 1F90 and the equivalent of three Asia-related credits from at least three different departments, in an honors program, ASIA 1F90 and five credits from at least three departments. The words *concentration in Asian studies* will be added to the student's transcript if the program is certified by the co-ordinator of Asian Studies. Students should consult with the co-ordinator when planning their programs.

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## Course listing

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The following courses concentrate wholly or substantially on Asia. They can be taken for credit towards a concentration in Asian Studies. In addition, a number of special seminars, tutorials and thesis courses are available in different departments. They can be counted for

Asian Studies credit if the instructor certifies that in a given year the content is wholly or substantially Asia-related.

ASIA	1F90	Introduction to the civilizations of Asia
ECON	2P17	Economic development
EXST	2F20	Comparative religion
EXST	2F80	Yoga: theory and practice
GEOG	2P06	Cultural geography
HIST	2P93	Foundations of modern Japan
PHIL	2F91	Religion and philosophy: comparative studies
PHIL	2P12	Indian philosophy: an introduction to Hindu thought
PHIL	2P13	Indian philosophy: an introduction to Buddhist thought
PHIL	2P16	Early Chinese philosophy
PHIL	2P17	Introduction to Chinese Buddhism
PHIL	4V30-4V34	Advanced studies in Eastern philosophy
POLI	2P42	The government and politics of China
POLI	2P43	The government and politics of India
POLI	3P24	International politics of the Third World
POLI	3P43	Politics in the Third World
POLI	3P44	Canada and the politics of Japan, Korea, Taiwan and Hong Kong

POLI	4P43	Comparative politics of Southeast Asia
PSYC	2F97	Experiential psychology
PSYC	3P54	Psychology of Western consciousness
PSYC	3P55	Psychology of Eastern consciousness
SANS	1F00	Sanskrit

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## Description of courses

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

**ASIA 1F90**  
**Introduction to the civilizations of Asia**  
An interdisciplinary introduction to the peoples, cultures and traditions of India, Southeast Asia, China and Japan. Topics include: history, philosophy and religion, art, politics, economic development and social customs. Credit will not be granted to student with prior credit in ASIA 102.

# Biochemistry

## *Biological Sciences department*

Alan W. Bown, chair

Donald J. Ursino (as of July 1, 1993)

## *Chemistry department*

Stuart Rothstein, chair

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### General information

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Biochemistry is taught in some universities by separate Biology, Chemistry and medical departments; in others the courses are offered by autonomous Biochemistry departments. At Brock, Biochemistry courses were developed originally by the Biological Sciences department and are now offered by that department and by the Department of Chemistry.

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### Honors program

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#### *Year 1*

BIOL 1F90; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; MATH 1P93, 1P94; PHYS 1F20 or 1F25 or 1F90; one humanities or social science context credit (see Note 1. and 2.).

#### *Year 2*

BIOL 2F01; one credit from BIOL 2P90, 2P91, 2P93, 2P98; CHEM 2P03, 2P20, 2P21; one-half credit from CHEM 2P12, 2P32, 2P42; the humanities or social science context credit not taken in year 1 (see Note 3.).

#### *Year 3*

BCHM 3P01, BIOL 3P50; one credit from BCHM 3P02, 3P04, BIOL 3P51, 3P91; one credit from CHEM 2P12, 2P32, 2P42 not taken in year 2; CHEM 3P20, 3P21; one elective credit. (see Note 4.).

#### *Year 4*

BIOL 4F90, 4F91 or CHEM 4F90, 4F91; either BCHM 4P07 or one-half credit from BCHM 3P02 or BCHM(BIOL) 3P04 (if not taken in year 3); one other

year 4 half credit in BCHM; one year 4 credit in CHEM; one elective credit.

In years when CHEM 4P27 is given, this is a strongly recommended option. CHEM 4P27, together with CHEM 4P40, may be used to satisfy the CHEM credit requirement.

A minimum of three credits from courses numbered 3(*alpha*)90 or above must be included in an honors degree.

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### Pass program

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Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

#### *Note:*

1. CHEM 1P90, 1P91 required; CHEM 1P80, 1P81 permitted.

2. Professional schools may require an introductory physics course with a lab.

3. It is recommended that students interested in bio-inorganic chemistry should take CHEM 2P32 in year 2.

4. CHEM 3P40 is strongly recommended; the course is strongly recommended for most projects in CHEM 4F90, 4F91 and should be taken in year 3 by students intending to proceed to a year 4 thesis in CHEM.



# Biological Sciences

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## Officers of instruction

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### *Chair*

Alan W. Bown  
Donald J. Ursino (as of July 1, 1993)

### *Professors*

Alan W. Bown  
William H. Cade  
Michael D. Dickman  
Arthur H. Houston  
Mohan S. Manocha  
Ralph D. Morris  
Peter Nicholls  
R. Peter Rand  
Donald J. Ursino

### *Associate professors*

Douglas H. Bruce  
Robert L. Carlone  
J. Cameron Lewis

### *Assistant professors*

Alan Castle  
Yousef Haj-Ahmad  
Fiona H. Hunter  
A. Joffre Mercier

### *Adjunct professors*

Salem S. Rao  
Lorne Stobbs

### *Laboratory instructors*

John Ciolfi  
Michael Crinson  
Ellen Maissan  
George Melvin

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## General information

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### *Mackenzie Chown, F234*

The biological sciences--the life sciences--encompass a broad spectrum of subjects from molecular biology to ecology as well as such disciplines as biochemistry, biophysics, genetics and physiology. The program offered by the department is designed to provide the student with a broad base in modern

biological thought, to fulfil the basic requirements for admission to professional and advanced degree studies and to prepare graduates for careers in the biological sciences and related fields. Although the undergraduate program provides students with flexibility in selecting the areas of biology most compatible with their interests and skills, it also ensures that students develop an overview of the major concepts and problems of modern biology as expressed at all levels of biological organization.

The objectives of the undergraduate program are realized through a group of core courses in years 1 and 2, each with an associated laboratory. Laboratory classes stress the investigative approach to experimental studies. Students move progressively from structured laboratory studies to increasingly independent investigations and in the honors year undertake individual research projects. Working from the core program, students may follow a variety of curriculum patterns to satisfy their interests.

In planning course programs students should bear in mind that all core BIOL courses and all ancillary mathematics and science requirements as well as both contextual course requirements should be completed by the end of year 2.

Students must consult faculty advisers when planning year 3 of the BSc (Pass) program or years 3 and 4 of the BSc (Honors) program.

In addition to its own programs, the Department of Biological Sciences participates in combined major programs with the departments of Chemistry, Earth Sciences, Geography, Mathematics, Physics, Psychology and with the Institute of Urban and Environmental Studies. The department is also a major participant in Biochemistry, Neuroscience, Pre-professional Studies for the Health Sciences and Health Studies. Students also have access to a variety of field biology courses offered in association with other Ontario universities.

The laboratory and technical facilities of the department complement the undergraduate program and provide diverse

opportunities for specialization at the graduate level.

Students contemplating careers in primary or secondary education should note the availability of undergraduate courses offered by the Faculty of Education carrying credit toward the undergraduate degree.

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## Honors program

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The honors year (year 4) provides students with the opportunity for either broadening their understanding of the biological sciences or for increased specialization. Ideally, the year 4 program provides an opportunity for the synthesis of material presented in earlier years and also provides an opportunity for independent investigative work. Each honors candidate undertakes a major research study under the direct supervision of a faculty member.

### Recommended program:

#### *Year 1*

BIOL 1F90; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; MATH 1P97, 1P98; one credit from PHYS 1F20, 1F25 or 1F90, ERSC 1F95 or COSC 1P90 and 1P98; one humanities or social science context credit.

#### *Note:*

1. Students registering for BIOL 1F90 should register in MATH 1P98 for the Fall Term, but should check with the Mathematics department regarding prerequisites.

2. Students preparing for graduate studies in the health sciences should note that many such programs require completion of a laboratory physics course; i.e., PHYS 1F25 or 1F90 rather than PHYS 1F20.

3. PHYS 1F20 or 1F25 is strongly recommended for students who do not have OAC physics.

#### *Year 2*

BIOL 2F01, 2P04, 2P05; one credit from

BIOL 2P90, 2P91, 2P93, 2P98; one other year 1 or year 2 level science credit other than BIOL offered by the Faculty of Mathematics and Science excluding ASTR 1F00, ERSC 1F90 and SCIE 1F30 (a year 2 level organic chemistry course is recommended); the humanities or social science context credit not taken in year 1.

**Year 3**

Three credits in BIOL numbered 2(*alpha*)90 or above; two elective credits (one of which may be BIOL 2F95). Students in year 3 are encouraged to take at least one of the four half credits BIOL 2P90, 2P91, 2P93 and 2P98 not taken in year 2.

**Year 4**

Four BIOL credits at year 3 or year 4 level including BIOL 4F90, 4F91 or BIOL 4F92; one elective credit. A minimum of three credits must be numbered 3(*alpha*)90 or above.

Students should note that not all courses listed will be offered each year.

**Students should plan their programs accordingly and are advised to refer to the applicable term timetable for details.**

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**Pass program**

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Students must complete at least seven BIOL credits of which four must be from the core program. The core program consists of BIOL 1F90, 2F01, 2P04, 2P05; one credit from BIOL 2P90, 2P91, 2P93, 2P98; three additional BIOL credits numbered 2(*alpha*)90 or above which may include BIOL 2F95 or 2P97. Also three ancillary science credits are to be completed, including CHEM 1P80, 1P81 or CHEM 1P90, 1P91; MATH 1P97, 1P98; one other year 1 or year 2 level science credit other than BIOL offered by the Faculty of Mathematics and Science excluding ASTR 1F00, ERSC 1F95, SCIE 1F30 and year 1 MATH courses.

**Note:**

1. BIOL 2F95 and 2P97 do not carry credit for the BSc (Honors) degree. Students who submit these for credit toward the BSc (Pass) must replace them with accepted BIOL credits if they subsequently enter the Honors program.

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**Concurrent BSc/BEd**

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The Faculty of Mathematics and Science and the Faculty of Education co-operate in offering a concurrent Pass BSc/BEd program for students interested in teaching mathematics or science at the Junior/Intermediate level: grades 4 -10. Please refer to the Education-Concurrent BSc/BEd Program listing for additional information.

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**Combined major programs**

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The Department of Biological Sciences offers combined major programs with the departments of Chemistry, Earth Sciences, Geography, Mathematics, Physics, Psychology and with the Institute of Urban and Environmental Studies. A minimum of ten credits (five from each discipline) is required for a combined major pass degree and a minimum of fourteen credits (seven from each discipline) is required for a combined major honors degree. Some typical programs:

**Biology and Chemistry**

**Honors program**

**Year 1**

BIOL 1F90; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; MATH 1P93, 1P94; PHYS 1F90; one humanities or social science context credit.

**Year 2**

BIOL 2F01; one credit from BIOL 2P04, 2P05, 2P90, 2P91, 2P93, 2P98; CHEM 2P03, 2P20, 2P21; one-half credit from CHEM 2P12, 2P32, 2P42; the humanities or social science context credit not taken in year 1.

**Year 3**

BCHM 3P01; BCHM 3P02 or BIOL(BCHM) 3P04 or 3P05 (two of these recommended when available); one year 3 credit in BIOL (BIOL 3P50 recommended); one credit from CHEM 2P12, 2P32, 2P42 not taken in year 2; one credit from CHEM 3P20, 3P21, 3P30, 3P31, 3P40, 3P51, 3P53; one elective credit.

**Year 4**

CHEM 4F90, 4F91 or BIOL 4F90, 4F91 or 4F92; one year 4 credit in the Department of Biological Sciences in the areas of biochemistry, biophysics or molecular biology or one year 4 half credit from one of those areas plus BCHM 3P02 or BIOL 3P50; one year 3 or year 4 credit in CHEM; one elective credit. CHEM 4P27 is recommended.

**Note:**

CHEM 3P40 is strongly recommended; the course is strongly recommended for most projects in CHEM 4F90, 4F91 and should be taken in year 3 by students intending to proceed to a year 4 thesis in CHEM.

Honors students who elect BIOL 4F90, 4F91 and who have taken only the minimum five credits in CHEM in years 1-3, may experience difficulty in obtaining the necessary two additional CHEM credits in year 4.

**Pass program**

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Biology and Geography**

**Honors program**

**Year 1**

BIOL 1F90; GEOG 1F91; MATH 1P97, 1P98; one humanities and one social science context credit.

**Note:** GEOG 1F90 is strongly recommended as a social science context credit.

**Year 2**

BIOL 2P04, 2P05; one credit from BIOL 2P90, 2P91, 2P93, 2P98; GEOG 2P11;

## Biological Sciences

one and one-half credits from GEOG 2P04, 2P05, 2P07, 2P09; one elective credit.

### Year 3

Two credits in BIOL; GEOG 3P56; one credit at the 3(alpha)00 level or above in GEOG from group B; one-half credit at the 3(alpha)00 level or above in GEOG from group B or C (see Geography department); one elective credit.

### Year 4

Two credits in BIOL; GEOG 4F99; one credit at the 4(alpha)00 level or above in GEOG from group B or C (see Geography department); one elective credit. One credit from BIOL 4F90, 4F91 or BIOL 4F92 or GEOG 4F90 must be included.

Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

## Biology and Mathematics

Honors program

### Year 1

BIOL 1F90; MATH 1P90, 1P93, 1P94, 1P98; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; one humanities or social science context credit.

### Year 2

Two credits from BIOL 2F01, 2P04, 2P05, 2P90, 2P91, 2P93, 2P98; MATH 2F00 or 2F95; COSC 1P01, 1P04; the humanities or social science context credit not taken in year 1.

### Year 3

Two credits in BIOL, one of which must be at the year 3 level; MATH 2F96, 2P20, 3P20; one elective credit.

### Year 4

Two year 3 or year 4 credits in BIOL; two year 3 or year 4 credits in MATH (either 3P58, 4P58 or 3P59, 4P59 and 4P19, 4P20 recommended); one elective credit.

Pass program

Satisfactory completion of the first three

years of the honors program entitles a student to apply for a pass degree.

## Biology and Psychology

Honors program

### Year 1

BIOL 1F90; PSYC 1F90; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; one humanities context credit; one elective credit (MATH 1P97 and 1P98 or 1F92 recommended).

### Year 2

Two credits from BIOL 2F01, 2P04, 2P05, 2P90, 2P91, 2P93, 2P98; PSYC 2F23; one other PSYC credit numbered 2(alpha)00 or above; one elective credit.

### Year 3

Two year 2 or year 3 credits in BIOL; two credits in PSYC numbered 2(alpha)90 or above (for students proceeding to the honors program, PSYC 3F40 is required); one elective credit.

### Year 4

Two credits in BIOL which may include BIOL 4F90 and 4F91 or BIOL 4F92; PSYC 4P92, 4P93 and one other year 4 PSYC credit (if neither BIOL 4F90, 4F91 nor BIOL 4F92 is taken, PSYC 4F91 is required); one elective credit.

Pass Program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

For combinations with Geological Sciences, Physics and Urban and Environmental Studies, see the entry under the other department.

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## Master of Science (MSc) program

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The Department of Biological Sciences offers specialized training in a wide variety of research areas leading to the MSc degree. Candidates will normally have an honors BSc or BA degree for admission to the program. A minimum of one year of full-time study and research is

required, this must include a minimum course program equivalent to two credits, BIOL 5F90 (MSc thesis) and one of which must be at the graduate level.

The department also offers an accelerated MSc program. Admission is an option available to students enrolled in BIOL 4F90, 4F91. Permission to enter the program is subject to satisfactory performance in course work and research. Further details are available from the departmental chair.

## Graduate courses

BIOL 5F90  
MSc thesis

BCHM 5P01  
Advanced plant biochemistry--metabolism

BCHM 5P02  
Advanced plant biochemistry--transport

BCHM 5P04  
Advanced bioenergetics

BCHEM 5P05  
Advanced topobiochemistry

BCHM 5P06  
Current topics in photosynthesis

BIOL 5P11  
Advanced histology

BIOL 5P15  
Advanced fluorescence and electron microscopy

BIOL 5P21  
Physiological plant pathology

BCHM 5P27  
Advanced enzyme and coenzyme mechanisms

BIOL 5P28  
Advanced neurobiology

BIOL 5F40/5P41  
Selected topics in biophysics (inter-university program)

BIOL 5P52  
Advanced developmental genetics

- BIOL 5P53  
Immunology
- BIOL 5P55  
Membrane structure and function
- BIOL 5P56  
Behavioral genetics
- BIOL 5P57  
Advanced recombinant DNA techniques
- BIOL 5P58  
Fungal genetics
- BIOL 5P59  
Advanced molecular virology
- BIOL 5P60  
Advanced seminar in population and behavioral ecology
- BIOL 5P61  
Advanced paleolimnology
- BIOL 5P62  
Advanced limnology
- BIOL 5P63  
Advanced seminar in ecosystem theory
- BIOL 5P64  
Advanced insect behavior
- BIOL 5P65  
Advanced comparative physiology
- BIOL 5P80  
Selected topics in contemporary biology
- BCHM 5P81  
Selected topics in contemporary biochemistry
- BIOL 5P95  
Graduate seminar

*For details, refer to the Graduate Calendar or contact the chair of the department.*

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**Prerequisites and restrictions**

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You must check course descriptions to ensure that you meet prerequisites. Stu-

dents may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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**Description of courses**

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

**BIOL 1F25**  
**Biology-- a human perspective**  
The course is directed towards non-science majors and presents topics that comment on contemporary issues of human concern. Recent topics have included exercise physiology, the biology of cancer and selected issues in neurobiology. High school biology is not a prerequisite for this course.  
*Lectures, 2 hours per week; seminar, lab, alternating weeks, 2 hours per week.*

**BIOL 1F90**  
**Concepts in biology**  
Topics selected from such areas of biology as cell structure and function; transmission and molecular genetics; physiology, neurobiology and behavior; development and immunology; origins, natural selection and evolution. Weekly laboratory exercises or seminars are coordinated with lectures. BIOL 1F90 is a prerequisite for most courses in the department.  
*Lectures, 3 hours per week; lab/seminar, 3 hours per week.*  
Prerequisite: OAC biology recommended.  
Note: Students registering for BIOL 1F90 should normally register for MATH 1P98 in the Fall Term. MATH 1P93 may be substituted for MATH 1P97 in the Winter Term.

**BIOL 2F01**  
**Principles of molecular and cellular biology**  
The examination of cellular processes and their relationship to cellular structure with emphasis on the structure and function of proteins, membranes, cell organelles and the expression of genetic information.  
*Lectures, seminars, 3 hours per week.*

Prerequisite: BIOL 1F90.  
Note: At least one year 1 credit in CHEM strongly recommended.

**BIOL 2F95**  
**Bioethics**  
(also offered as PHIL 2F95)  
An interdisciplinary course that focusses on value conflicts and moral dilemmas in biology and medicine. A major component is the discussion of specific case studies in areas such as reproductive interventions, medical experimentation, concepts of 'health' and 'disease', modification of behavior, lifestyle choices, allocation of scarce or expensive medical resources and death and dying.  
*Lectures, seminar, 3 hours per week.*  
Restriction: Students must have a minimum of 5.0 overall credits.  
Prerequisite: university credit in BIOL or PHIL or permission of the instructor.  
Note: May count as an elective, but not as a major course in an honor BIOL or BIOL (combined) major.

**BIOL 2P04**  
**Principles of community and environmental biology**  
Biological processes at the community level of biological organization; patterns and diversity in natural ecosystems in terms of environmental toxins and their bioaccumulation in food webs, factors influencing community structure, biotic diversity and energy flow through ecosystems.  
*Lectures, 2 hours per week; lab, 3 hours per week (weeks 1 - 6 in Duration 2 or weeks 7 - 12 in Duration 3).*  
Prerequisite: BIOL 1F90. At least one year 1 half credit in MATH strongly recommended.  
Credit will not be granted to students who have prior credit in BIOL 2F03.

**BIOL 2P05**  
**Principles of population and behavioral ecology**  
The examination of biological processes and patterns of uniformity and diversity at the individual and population levels of organization; group characteristics of populations and the evolutionary basis of animal behavior.  
*Lectures, 2 hours per week; lab, 3 hours per week (weeks 1 - 6 in Duration 2 or*

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*weeks 7 - 12 in Duration 3).*

Prerequisite: BIOL 1F90. At least one year 1 half credit in MATH strongly recommended.

Credit will not be granted to students who have prior credit in BIOL 2F03.

### BIOL 2P90

#### **Invertebrate zoology**

The diversity, structure, function, behavior and evolutionary relationships of the invertebrate phyla.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Restriction: Students must have a minimum of 5.0 overall credits.

Prerequisite: BIOL 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in BIOL 292.

### BIOL 2P91

#### **Comparative vertebrate zoology**

An evolutionary examination of the vertebrate taxa with emphasis on the structure, development and function of organ systems.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Restriction: Students must have a minimum of 4.0 overall credits.

Prerequisite: BIOL 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in BIOL 292.

### BIOL 2P93

#### **Plant biology--an evolutionary perspective**

Through the study of form, structure and the reproductive cycles of a large diversity of plants, this course will focus on the major evolutionary trends seen in the plant kingdom.

*Lectures, 3 hours per week; lab/seminar, 3 hours per week.*

Restriction: Students must have a minimum of 4.0 overall credits.

Prerequisite: BIOL 1F90 or permission of the instructor.

### BIOL 2P97

#### **Human physiology**

An introduction to vertebrate function with specific reference to humans. Topics will focus on circulatory, excretory, respiratory, digestive and reproductive systems and the role of the endocrine and

other systems in regulation and adaptive responses.

*Lectures, seminar, 4 hours per week.*

Prerequisite: BIOL 1F25 with a grade of 75 percent or better or 1F90.

Note: This course may count as an elective, but not as a major course in an honors BIOL or BIOL (combined) major.

### BIOL 2P98

#### **Principles of microbiology**

Lecture and laboratory course dealing with the principles of microbiology. Structure and biology of various kinds of micro-organisms will be studied.

*Lectures, 3 hours per week; lab, 3 hours alternate weeks.*

Prerequisite: BIOL 1F90.

Credit will not be granted to students who have prior credit in BIOL 340hc.

### BCHM 3P01

#### **Metabolic biochemistry**

pH and buffers, biochemical energetics, carbon metabolism of carbohydrates, lipids and proteins; nitrogen metabolism. *Lectures, seminar, 3 hours per week; labs to be announced.*

Restriction: Open only to BCHM (single), BTEC (single), BIOL (single or combined) and CHEM (single or combined) majors with a minimum of 10.0 overall credits.

Prerequisite: BIOL 2F01 or CHEM 2P20 or equivalent year 2 CHEM.

### BCHM 3P02

#### **Proteins and enzymes**

Primary-, secondary-, tertiary-, and quaternary-protein structure; protein function and physical chemistry; protein structure and enzyme activity. Enzyme mechanisms and kinetics; allostery and control; membrane-bound enzymes; multi-enzyme systems.

*Lectures, seminars, simulations, 3 hours per week; lab, 3 hours per week for six weeks.*

Restriction: Open only to BCHM (single), BTEC (single), BIOL (single or combined) and CHEM (single or combined) majors with a minimum of 10.0 overall credits.

Prerequisite: BIOL 2F01.

### BIOL(BCHM) 3P04

#### **Photobiology**

The interaction of light with biological molecules. An introduction to photophysics and photochemistry, photosynthesis, vision and biological coloration. Laboratories will focus on the basic principles and biological applications of spectroscopic techniques.

*Lectures, 3 hours per week; laboratory, 3 hours per week, alternate weeks.*

Prerequisite: BIOL 2F01. Any year 1 credit in PHYS strongly recommended or consult the instructor for permission to register.

### BIOL 3P22

#### **An introduction to tissue structure**

Microscopic anatomy and functional organization of epithelia, connective tissue, blood, nervous tissue and muscle.

*Lectures, 3 hours per week; laboratory, 3 hours per week.*

Restriction: Open only to BIOL (single or combined) majors and BIOL (general studies) students with a minimum of 10.0 overall credits.

Prerequisite: BIOL 2F01 or permission of the instructor.

Credit will not be granted to students who have prior credit in BIOL 324.

### BIOL 3P23

#### **Histology of vertebrate organ systems**

The microanatomy and functional morphology of organs and organ systems: integumentary, circulatory, digestive, excretory, reproductive, respiratory, endocrine and nervous.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Restriction: Open only to BIOL (single or combined) majors and BIOL (general studies) students with a minimum of 10.0 overall credits.

Prerequisite: BIOL 2P91 (BIOL 3P22 strongly recommended) or permission of the instructor.

Credit will not be granted to students who have prior credit in BIOL 324.

### BIOL 3P28

#### **Developmental biology**

Cell lineage studies in early embryonic development. Origin of cell heterogeneity. Cell-cell interactions and tissue organization. Morphogenesis and regeneration. Molecular investigations of dif-

ferential gene expression.

*Lectures, 3 hours per week; lab, 3 hours per week, first 6 weeks.*

Prerequisite: BIOL 2F01.

### BIOL 3P34

#### Neurobiology

Nervous systems from the single neuron level to integrated function in the brain. Topics include: sensory systems, synaptic function and transmitter substances, developmental aspects and neural plasticity, cellular basis of behavior.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisites: two credits from BIOL 2F01, 2P04, 2P05, 2P90, 2P91, 2P93.

Credit will not be granted to students who have prior credit in BIOL 320.

### BIOL 3P36

#### Environmental physiology

Physiological mechanisms of response to environmental change. Emphasis will be given to osmotic, ionic and acid-base regulation, respiratory adaptation and thermal relationships associated with penetration of freshwater and terrestrial habitats.

*Lectures, 3 hours per week; seminar, tutorials, 2 hours every 2 weeks.*

Prerequisite: BIOL 2F01.

Credit will not be granted to students who have prior credit in BIOL 3P35.

### BIOL 3P42

#### Microbial physiology

Microbial growth and metabolism as influenced by nutritional and environmental factors.

*Lectures, seminar, 3 hours per week; lab, 3 hours per week for 6 weeks.*

Prerequisite: BIOL 2P98.

### BIOL 3P50

#### Molecular genetics

(also offered as BTEC 3P50)

Topics will include: the genetic code and information flow from nucleic acids to proteins, RNA and protein synthesis; prokaryotic and eukaryotic chromosomes; gene organization; transcription, RNA processing; codon usage; enhancers and transposons.

*Lectures, 3 hours per week; lab 3 hours per week, for 6 weeks.*

Prerequisite: BIOL 2F01 or permission of the instructor.

### BIOL 3P51

#### Genetics: transmission, development, population

Concepts of classical genetics including genetic mapping, extra-nuclear inheritance, polyploidy, genetics and development, evolutionary genetics.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Restriction: Students must have a minimum of 5.0 overall credits.

Prerequisite: BIOL 1F90.

### BIOL 3P60

#### Animal behavior

Behavior of animals with emphasis on the social context of behavior and natural selection: the evolution and significance of visual, auditory and olfactory communication; spacing behavior and the evolution of diversity in spacing systems; mating systems and sexual selection; the development of species-typical behavior; the development and significance of periodic behavior patterns including endogenous rhythms orientation and navigation.

*Lectures, seminar, 3 hours per week; lab as required.*

Prerequisites: BIOL 2P04, 2P05; one of BIOL 2P90, 2P91.

Note: May be taken concurrently with the permission of the instructor.

### BIOL 3P63

#### Field limnology

Physical-chemical aspects of limnology and their influence on the species composition of the aquatic organisms in selected lakes and streams in Ontario.

*Lectures, seminar, 2 hours per week; lab, 3 hours per week.*

Prerequisites: BIOL 2P04, 2P05.

### BIOL 3P64

#### Introductory insect biology

Familiarity with insects will be gained through field and laboratory exercises and lectures covering morphology, physiology, evolution, ecology, social behavior and harmful and beneficial aspects of the insects.

*Lectures, 2 hours per week; lab, 3 hours per week.*

Prerequisite: BIOL 1F90 or permission of instructor.

Credit will not be granted to students who have prior credit in BIOL 296hc.

### BIOL 3P65

#### Investigative studies in animal ecology

A laboratory and field ecology course that provides experience in the process of science; question asking and formulation of hypotheses, experimental design, data collection and analysis, verbal and written presentation of results.

*Lectures, lab, 6 hours per week.*

Prerequisites: BIOL 2P04, 2P05, 2P90 and 2P91 or permission of the instructor.

### BIOL 3P66

#### Aquatic plant ecology

Field and laboratory recognition of algae as well as higher aquatic plants; adaptations to an aquatic environment; the physiology and the economic importance of these plants. Primary productivity, standing crop, collection, preservation and identification methods will be emphasized.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisites: BIOL 2P04, 2P05.

Note: May be taken concurrently with the permission of the instructor.

### BIOL 3P71

#### Ontario universities field biology course

In co-operation with Carleton, Trent, Windsor, Toronto, Queen's, Waterloo, Western and York universities, the Department of Biological Sciences participates in a series of one and two week courses at established field stations in Algonquin Park, Lake Opinicon and the OMNR station at Dorset, Ontario. In recent years, courses have been offered outside the province at field stations in Alberta, Manitoba and the Northwest Territories. Each course is a separate unit and may include students from all participating universities. Among the units offered are: arid environments, insect sampling, limnology, fish ecology ornithology, aquatic ecology, marine biology, bat behavior, scavenging arthropods, small mammal ecology, arctic ecology, high arctic tundra and alpine ecology. The number of units offered will vary from year-to-year, but those available will normally be scheduled during one- and two-week periods from late April through early September. Two one-week units or one two-week unit will constitute the equivalent of one-half

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credit. Registrants normally defray their own travel expenses to the field station. Modest board and room costs are required in addition to the usual half credit registration fee.

Restriction: Consult the department regarding permission to register.

Prerequisites: BIOL 2P04, 2P05.

Note: Registration must be completed by the end of January with the course coordinator.

### BIOL 3P72

#### Ontario universities field ecology course

See BIOL 3P71 for course description.

Restriction: Consult the department regarding permission to register.

Prerequisites: BIOL 2P04, 2P05.

Note: May not be taken until BIOL 3P71 has been completed.

### BIOL 3P80

#### Evolution

The idea of evolution and its development; scientific method and the past; classical, modern pre-Darwinian and Darwinian concepts; the history of the earth and the fossil record; biogeographical; adaptation, natural selection and the origin of the species; molecular evolution; evolution of specific taxonomic groups including humans.

*Lectures, 2 hours per week, seminar, 1 hour per week.*

Prerequisite: completion of required courses in year 2 in single or combined major programs in biology or equivalent or permission of the instructor.

### BIOL 3P84

#### Investigative neurobiology

Electrophysiological methods in neurobiology including intracellular and extracellular recordings using sensory and neuromuscular systems. Emphasis on the development of quantitative skills, experimental design and writing scientific papers. Prior knowledge of concepts used in neurobiology is essential.

*Lectures, 1 hour; labs, 5 hours per week.*

Prerequisite: two credits from BIOL 2F01, 2P04, 2P05, 2P91, PSYC 2F36. BIOL 3P34 is strongly recommended.

### BIOL 3P85

#### Tropical biology

A specialized course, the orientation of

which will be determined by the participating instructors. Held on location in the tropics it will include: field experience, seminars, individual projects and written reports. Participants are expected to cover their own travel, subsistence and other personal expenses.

Restriction: Open only to BIOL (single or combined) majors with BIOL (general studies) students with a minimum of 10.0 overall credits.

Prerequisite: two year 2 level BIOL credits or permission of the instructor.

Note: Infrequently available.

### BIOL 3P91

#### Plant physiology--metabolic and biophysical processes

The metabolism of carbon and nitrogen compounds; photosynthetic and respiratory processes; mineral nutrition; water relations; gas exchange and transport processes.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Restriction: Open only to BCHM (single), BTEC (single), BIOL (single or combined) and CHEM (single or combined) majors with a minimum of 10.0 overall credits.

Prerequisites: BIOL 2F01, 2P93 or permission of the instructor.

### BIOL 3P92

#### Plant physiology--growth and development

The processes involved in plant growth and reproduction and the factors regulating these processes. Topics receiving special emphasis will include: the flowering hormones and growth substances, dormancy and stress responses.

*Lectures, 2 hours per week; labs, 3 hours per week.*

Restriction: Open only to BCHM (single), BTEC (single), BIOL (single or combined) and CHEM (single or combined) majors with a minimum of 10.0 overall credits.

Prerequisites: BIOL 2F01, 2P93 or permission of the instructor.

### BIOL(BCHM) 3V90-3V99

#### Special topics in biology

A lecture/seminar course in which a student may explore areas not represented by existing courses. The subject area may not overlap with that of BIOL 4F90,

4F91, 4F92 or any year 3, year 4 or graduate course in BIOL. Under certain circumstances, a student may carry out, under faculty supervision, a detailed study of the scientific literature pertinent to a specific topic. The results of this study will be presented as a major essay and as a formal seminar.

Restriction: Open only to BCHM (single), BTEC (single), BIOL (single or combined) and CHEM (single or combined) majors with a minimum of 10.0 overall credits.

Prerequisite: permission of supervising instructor and chair of the department.

### BIOL 4F90

#### BSc (honors) thesis

To be taken in conjunction with BIOL 4F91. Each student will undertake a limited research project involving field or laboratory study under faculty supervision. Students electing to pursue studies on non-laboratory ecological projects will be permitted to initiate their programs during the summer preceding registration in year 4, but may not include data or observations obtained as a consequence of participation in field courses such as BIOL 3P71 or 3P72. Submission and oral defence of a thesis is required. Restriction: Open only to BCHM (single), NEUR (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and with either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

### BIOL 4F91

#### Literature research and seminar

To be taken in conjunction with BIOL 4F90. Each student will undertake a detailed study of the scientific literature relevant to the topic of the BSc (honors) thesis. The review will be included in the thesis and will be presented as a seminar. Restriction: Open only to BCHM (single), NEUR (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and with either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

### BIOL 4F92

#### Library research essays

For students not registered for BIOL

4F90 and 4F91. Each student will be required to carry out two detailed studies of the scientific literature under faculty supervision. The results of these two studies will be presented in major essays and presented as formal seminars. One research topic is to be completed each term.

Restriction: Open only to BCHM (single), NEUR (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and with either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

#### BCHM 4P01

##### **Plant biochemistry--metabolism**

A critical appraisal of the current research literature concerning selected aspects of carbon and nitrogen metabolism. Particular emphasis will be placed on the pathways by which inorganic carbon and nitrogen are assimilated into organic form.

*Lectures, seminar, 2 hours per week.*

Restriction: Open only to BCHM (single), BTEC (single), BIOL (single or combined) and CHEM (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BCHM 3P01 or 3P02 or permission of the instructor.

#### BCHM 4P02

##### **Plant biochemistry--transport**

A critical appraisal of the current research literature concerning transport processes at plant cell membranes. Particular emphasis will be placed on the role of postulated proton translocating ATPases at the plasma membrane and tonoplast.

*Lectures or seminar, 2 hours per week.*

Restriction: Open only to BCHM (single), BTEC (single), BIOL (single or combined) and CHEM (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BCHM 3P01 or 3P02 or permission of the instructor.

#### BCHM 4P03

##### **Current topics in photobiology**

A lecture/seminar course on current topics in photobiology. Topics will include: photosynthesis, vision and photoregulation of genes and proteins. *Lectures, seminar, 2 hours per week.* Restriction: Open only to BCHM (single), BTEC (single), BIOL (single or combined) and CHEM (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: any year 3 BCHM credit or consult the instructor for permission to register.

#### BCHM 4P04

##### **Bioenergetics**

Energy conservation and use in the cell; thermodynamics of oxidative phosphorylation; chemical and chemiosmotic energy stores; mitochondrial, chloroplast and bacterial phosphorylation; growth and whole organism energetics; Elsdon's and Kleiber's laws. *Lectures, seminar, 2 hours per week.*

Restriction: Open only to BCHM (single), BTEC (single), BIOL (single or combined) and CHEM (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BCHM 3P01 or 3P02 or 3P04 or 3P05 or permission of the instructor.

#### BCHM 4P07

##### **Advanced seminar in biochemistry**

A seminar course involving student presentation of selected research papers in biochemistry.

*Seminars, 2 hours per week.*

Restriction: Open only to BCHM (single), BTEC (single), BIOL (single or combined) and CHEM (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BCHM 3P01 or 3P02 or 3P04 or 3P05 or permission of the instructor.

#### BIOL 4P23

##### **Fungal physiology**

The physiology and biochemistry of fungi with a concentration on those aspects of physiology where fungi are significantly different from other organisms and often unique. Topics will include: growth, nutrition, fungal enzyme activity and the reproduction and physiology of host-parasite interaction.

*Lectures, seminar, 2 hours per week.*

Restriction: Open only to BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BIOL 2P98 or permission of the instructor.

#### BIOL 4P24

##### **Industrial and agricultural microbiology**

(also offered as BTEC 4P24)

The use of microbes, both bacteria and fungi, as tools in industry and agriculture. Topics will include: industrial fermentation; recombinant DNA approaches to industrial problems; composting and silage; edible fungi; mycorrhizal associations and biological control agents.

*Lectures, seminar, 2 hours per week.*

Prerequisite: BIOL 2P98 and 3P50 or permission of the instructor.

#### BIOL 4P28

##### **Developmental neurobiology**

A seminar course on the principles of neural development. Topics include: cell lineage and early determinative events, trophic functions, growth and plasticity, synaptogenesis and gene expression in the establishment of the nervous system. *Seminars, 2 hours per week.*

Restriction: Open only to NEUR (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BIOL 3P28 and 3P34 or permission of the instructor.

#### BIOL 4P34

##### **Seminar in systems neurophysiology**

Selected topics in sensory and integrative mechanisms in the nervous system.



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*Seminars, 2 hours per week.*

Restriction: Open only to BTEC (single), NEUR (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BIOL 3P34 or permission of the instructor.

Credit will not be granted to students who have prior credit in BIOL 4P50.

### BIOL 4P36

#### **Seminar in systemic physiology and endocrinology**

Selected topics in systemic function and endocrine regulation.

*Lecture, seminars, 2 hours per week.*

Restriction: Open only to BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BIOL 3P36 or permission of the instructor.

Credit will not be granted to students who have prior credit in BIOL 4P30.

### BIOL 4P51

#### **Molecular virology**

(also offered as BTEC 4P51)

An in-depth study of bacterial and animal viruses. Topics include: biochemical properties, virus-host interaction, productive cycle, effect of virus on host cell and organism, viral vectors and gene therapy, recombinant viral vaccines and origin of virus.

*Lectures, seminar, 2 hours per week.*

Restriction: Open only to BTEC (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BIOL 3P50 or permission of the instructor.

### BIOL 4P52

#### **Developmental genetics**

The role of structural/regulatory genes in development. Topics include: homeotic genes in vertebrate and invertebrate pattern formation, primary induction and peptide growth factors and the use of transgenic mice and gene targeting to study mammalian embryogenesis.

*Lectures, seminars, 2 hours per week.*

Restriction: Open only to NEUR (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BIOL 3P28 and either BIOL 3P50 or 3P51 or consult the instructor for permission to register.

### BIOL 4P53

#### **Immunology**

Humoral and cellular immunity; structure and synthesis of immunoglobulins; origin of antibody diversity; transplantation immunity and the importance of the major histocompatibility complex; autoimmunity and allergic reactions.

*Lectures, seminar, 2 hours per week.*

Restriction: Open only to BCHM (single), BTEC (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BCHM 3P01 or BIOL 3P50.

### BIOL 4P56

#### **Behavioral genetics**

The genetics of activities performed by the organism in relation to its environment. Coverage will include single gene effects, chromosome aberrations and behavior, continuous variation and the inheritance of quantitative traits, the genetics of behavioral traits in man, *Drosophila*, rodents and other taxa.

*Lectures, seminar, 2 hours per week.*

Restriction: Open only to BTEC (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BIOL 3P51 or permission of the instructor.

### BIOL 4P58

#### **Fungal genetics**

(also offered as BTEC 4P58)

Transmission and molecular genetics of fungi. Recent advances in gene manipulation and the contribution of studies on these organisms to general genetic principles will be covered.

*Lectures, seminar, 2 hours per week.*

Restriction: Open only to BCHM (single), BTEC (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average or approval to year 4.

Prerequisite: BIOL 3P50 or 3P51 or permission of the instructor.

Credit will not be granted to students who have prior credit in BIOL 4P55.

### BIOL 4P60

#### **Advanced seminar in population and behavioral ecology**

Topics selected vary from year-to-year partly in response to student interests.

*Lectures, seminar, 2 hours per week.*

Restriction: Open only to BTEC (single) and BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: one of BIOL 3P60, 3P64, 3P65.

### BIOL 4P61

#### **Paleolimnology**

The use of microfossils in lake sediments for interpretation of past changes in climate and biotic species composition. Pollen, diatom, *Cladocera* and sediment geochemical stratigraphy will be stressed.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BIOL 3P63 or permission of the instructor.

### BIOL 4P62

#### **Concepts of limnology**

Productivity of aquatic ecosystems, species diversity, indicator species assemblages, lake classification and current concepts of limnology.

*Lectures, seminar, 2 hours per week; lab, 3 hours per week.*

Restriction: Open only to BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BIOL 3P63 or permission of the instructor.

Prerequisites: BIOL 2P90, 2P91 or permission of the instructor.

#### BIOL 4P64

##### **Insect behavior**

Exploration of selected topics in the field of insect behavior including: programming and integration of behavior orientation and dispersal, feeding and plant-herbivore co-evolution, chemical, visual and acoustical communication, defensive behavior, reproductive behavior and the eusocial insects.

*Lectures, seminar, 2 hours per week.*

Restriction: Open only to BTEC (single) and BIOL (single or combined) with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: BIOL 3P60 or 3P64 or permission of the instructor.

#### BCHM 4P67

##### **Biophysical techniques**

(also offered as BTEC 4P67 and CHEM 4P67)

Modern instrumental methods of biotechnology. The course will emphasize understanding theories underlying commonly used techniques. Topics to include: optical, X-ray, NMR and mass spectral techniques, membrane chemistry and electrophoresis, computer modelling.

*Lectures, seminar, 4 hours per week.*

Prerequisite: CHEM 2P21 or 2P22 or consult the instructor for permission to register.

#### BIOL 4P70

##### **Coral reef biology**

Reef structure, flora, fauna, framework elements, zonation, physical environment, physical formation and destruction, biogenesis, biodegradation, mechanical properties of sessile forms, ecological interrelationships and other topics.

*Lectures, 2 hours per week; seminar/lab 2 hours per week.*

Restriction: Open only to BIOL (single or combined) majors with a minimum of 15.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

# Biotechnology

*Biological Sciences department*  
Alan W. Bown, Chair  
Donald J. Ursino (as of July 1, 1993)

*Chemistry department*  
Stuart Rothstein, Chair

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## General information

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Biotechnology is the use of living organisms to produce goods and services for practical and industrial purposes. Biotechnology has been used for centuries in fermentation and the making of bread and cheese, but today involves new scientific tools like genetic and protein engineering, cell fusion and production of monoclonal antibodies. Biotechnology is a strategic technology and an important economic component of industrialized nations. Biotechnology at Brock is a joint venture of the departments of Biological Sciences and Chemistry, with courses drawn from both departments plus courses designed specifically for the program.

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## Honors program

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### *Year 1*

BIOL 1F90; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; MATH 1P93, 1P94 or MATH 1P97, 1P98; PHYS 1F90; one humanities or social science context credit.

### *Year 2*

BTEC 2P09, 2P63; BIOL 2F01; one-half credit from BIOL 2P04, 2P05, 2P90, 2P91, 2P93, 2P98; CHEM 2P12 or 2P42; CHEM 2P20, 2P21; humanities or social science credit not taken in year 1.

### *Year 3*

BTEC 3P09, 3P50; BCHM 3P01, 3P02; CHEM 3P20; one of BTEC 3P62 or 3P63; one credit from BIOL 3P28, 3P42, 3P51, CHEM 3P40, 3P51; one elective credit.

### *Year 4*

BTEC 4F90 and 4F91; one credit from BTEC 4P24, 4P58, BIOL 4P23, 4P51, 4P53, BCHM 4P01, 4P02, 4P07; one-half credit from CHEM 4P27, BTEC 4P67, 4P68; BTEC 3P62 if not taken in year 3; BTEC 3P63 if not taken in year 3; one elective credit.

### *Note:*

BIOL 2P98 is highly recommended.

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## Pass program

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Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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## Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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## Description of courses

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

### BTEC 2P09

#### **Introduction to biotechnology**

An overview of traditional and modern biotechnology. Topics include: fermentation processes, medical, agricultural and forensic applications; the use of biotechnology in waste treatment.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisites: BIOL 1F90 and CHEM 1P80, 1P81 or CHEM 1P90, 1P91.

### BTEC 2P63

#### **Introduction to biophysical chemistry**

(also offered as CHEM 2P63)

The properties of colloidal systems applied to proteins and nucleic acids. Physical photochemistry, electrochemistry and kinetics applied to biological systems.

*Lectures, 3 hours per week; lab, 3 hours per week.*

### BTEC 3P09

#### **Bioreactor processes**

An overview of fermentation technology and bioprocessing: the kinetics and thermodynamics of fermentation. Topics include: batch and continuous fermentation, biomass production (single-cell proteins), immobilized systems, by-product recovery and scale-up.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: BTEC 2P63.

### BTEC 3P50

#### **Molecular genetics**

(also offered as BIOL 3P50)

Topics include: the genetic code and information flow from nucleic acids to proteins, RNA and protein synthesis; prokaryotic and eukaryotic chromosomes; gene organization; transcription, RNA processing; codon usage; enhancers and transposons.

*Lectures, 3 hours per week; lab 3 hours per week, for 6 weeks.*

Prerequisite: BIOL 2F01 or permission of the instructor.

### BTEC 3P62

#### **Bio-organic chemistry**

(also offered as CHEM 3P62)

The biosynthesis of the natural products of secondary metabolism. Introduction to the use of enzymes and other biological reagents in organic synthesis.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 2P21.

### BTEC 3P63

#### **Protein and nucleic acid chemistry**

(also offered as CHEM 3P63)

The chemical synthesis and organic chemistry of proteins, enzymes and nucleic acids; their isolation and purification.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 2P21.

#### BTEC 4F90

##### **Research project**

Experimental or theoretical research carried out under the supervision of a member of staff.

Restriction: Open only to BTEC (single), CHEM (single or combined), BIOL (single or combined) majors with approval to year 4.

Prerequisite: permission of the chair.

#### BTEC 4F91

##### **Thesis**

The thesis will incorporate the results of the research project (BTEC 4F90) and will form the basis of a seminar presented by the student.

Restriction: Open only to BTEC (single), BIOL (single or combined), CHEM (single or combined) majors with approval to year 4.

Co-requisite: BTEC 4F90.

#### BTEC 4P24

##### **Industrial and agricultural microbiology**

(also offered as BIOL 4P24)

The use of microbes, both bacteria and fungi, as tools in industry and agriculture. Topics will include: industrial fermentation; recombinant DNA approaches to industrial problems; composting and silage; edible fungi; mycorrhizal associations and biological control agents.

*Lectures, seminar, 2 hours per week.*

Prerequisites: BIOL 2P98 and BTEC 3P50 or permission of the instructor.

#### BTEC 4P51

##### **Molecular virology**

(also offered as BIOL 4P51)

An in-depth study of bacterial and animal viruses. Topics include: biochemical properties, virus-host interaction, productive cycle, effect of virus on host cell and organism, viral vectors and gene therapy, recombinant viral vaccines and origin of virus.

*Lectures, seminar, 2 hours per week.*

Prerequisite: BTEC 3P50 or permission of the instructor.

#### BTEC 4P58

##### **Fungal genetics**

(also offered as BIOL 4P58)

Transmission and molecular genetics of fungi. Recent advances in gene manipulation and the contribution of studies on these organisms to general genetic principles will be covered.

*Lectures, seminar, 2 hours per week.*

Prerequisite: BTEC 3P50 or BIOL 3P51 or permission of the instructor.

Credit will not be granted to students who have prior credit in BIOL 4P55.

#### BTEC 4P67

##### **Biophysical techniques**

(also offered as BCHM 4P67 and CHEM 4P67)

Modern instrumental methods of biotechnology. The course will emphasize understanding theories underlying commonly used techniques. Topics to include: optical, X-ray, NMR and mass spectral techniques, membrane chemistry and electrophoresis, computer modeling methods.

*Lectures, seminar, lab, 4 hours per week.*

Prerequisite: CHEM 2P21 or 2P22 or consult the instructor for permission to register.

#### BTEC 4P68

##### **Biotransformations**

(also offered as CHEM 4P68)

The organic reactions carried out by isolated enzymes, fungal cultures and bacteria. The production of pharmaceutical, agricultural and industrial chemicals by biological processes.

*Lectures, 3 hours per week.*

Prerequisite: BTEC 3P62 or 3P63.

# Business Economics

*Faculty of Business*  
A. William Richardson, Dean

*Department of Economics*  
Felice F. Martinello, Chair

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## General information

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The Bachelor of Business Economics (BBE) is a pass (three-year) degree program offered jointly by the Faculty of Business and the Department of Economics. It is designed for students who wish to combine the study of Business Administration and Economics. The normal minimum grade requirement for admission to the BBE program is a 65 percent average on six OACs. (See page 25.)

While an honors degree program is not available for the BBE degree, students with honors standing may be considered for transfer into the honors program in Business and/or Economics at any time. An honors program provides students with the opportunity for a more intensive examination of issues in the field. For transfer into the combined honors program in Economics and Business Administration, the student should consult the Faculty of Business and the Department of Economics.

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## Pass program

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### *Year 1*

ACTG 2P11, 2P12; ECON 1P91, 1P92; MGMT 1P91, 1P92; MATH 1P98; COSC 1P90; one humanities or one science context credit.

### *Year 2*

ECON 2P21, 2P22, 2P31, 2P32, 2P90; FNCE 2P92; MKTG 2P96; OBHR 3P41; one humanities or science context credit.

### *Year 3*

One and one-half year 3 ECON credits; FNCE 2P93; MKTG 2P97 or OBHR 3P42; MGMT 2P30, 3P81; one-half ACTG, ENTR, FNCE, MGMT, MKTG, OBHR or ECON credit; one elective credit.

### Honors program

For students with honors standing wishing to pursue a BBA, consult the Faculty of Business adviser.

Students with honors standing wishing to pursue a combined honors degree in Economics and Business should consult the Faculty of Business and the Department of Economics.

For students with honors standing wishing to pursue an honors degree in ECON:

(a) Students in the BBE program as outlined in the 1987-88 or later undergraduate calendar:

### *Years 1, 2 and 3*

As in the BBE program with the exception that MATH 1P97 is required and should be taken as one half elective credit in the BBE program or in the Spring or Summer Session prior to admission to year 4. Students who expect to enrol in year 4 are encouraged to take ECON 3P91 in year 3.

### *Year 4*

ECON 3P90, 3P91, 4F90, 4P13, 4P14; two year 3 ECON credits.

(b) Students in the BBE program as outlined in the 1986-87 or earlier calendars:

As in the BBE program with the exception that ECON 2P31, 2P32 and MATH 1P97 are required and must be taken prior to year 4. Students should note that unless these credits are taken to fulfil BBE elective requirements, the credits will have to be completed prior to year 4.

### *Year 4*

ECON 3P90, 3P91, 4F90, 4P13, 4P14; two year 3 ECON credits.

# Canadian Studies

## Director

Nicolas Baxter-Moore  
Department of Politics

Co-operating faculty from the following departments and programs: Drama, Economics, English Language and Literature, Film Studies, French, Geography, History, Politics, Sociology, Theatre and Visual Arts.

Canadian Studies offers combined major programs leading to the BA at honors and pass levels.

A combined major in Canadian Studies is always taken in conjunction with another humanities or social science discipline.

Canadian Studies offers students the opportunity to study Canadian culture and society from a variety of disciplinary perspectives. Students take a number of interdisciplinary Canadian Studies courses along with a number of Canada-centred courses offered by other departments. Emphasis is placed upon the unique nature of Canadian experience and upon the value and practice of combining disciplinary approaches in the study of culture and society.

The Canadian Studies courses offered in years 1, 2 and 3 are designed to introduce students to interdisciplinary studies in a progressive manner. The first-year course is taught by one instructor and examines the development of Canadian culture from the perspectives of disciplines within the humanities. The second-year course is organized into two separate interdisciplinary segments, one taught by an instructor from the social sciences, the other by an instructor from the humanities. At the third-year level, students take a fully interdisciplinary seminar course.

## Notes:

1. Canadian Studies students must take one credit in FREN (required in some combined major programs) or a course

related to French Canada as part of their degree program. Eligible courses appear with an asterisk (\*) in the list of approved Canadian Studies courses.

2. Students are designated "humanities" or "social science" students according to the designation of the co-major discipline. Humanities students must fulfil the language requirement of the co-major discipline in which they are working.

3. Humanities students must take POLI 1F90 as their social science context elective in year 1 and in year 2 they must take CANA 2F12. Social science students must take one credit from CANA 2P07, 2P08, 2P09 or 2P10 as part of their program.

4. It is strongly recommended that all Canadian Studies students complete one course in Canadian history, one course in Canadian politics, one in Canadian literature and one Canadian-related fine arts course as part of their combined major program of study.

5. To encourage interdisciplinary study, approved Canadian Studies credits must be chosen from approved courses outside the student's co-major.

Each student should meet with the director of Canadian Studies and the chair or director of the co-major discipline at the beginning of the second year of study, to ensure that his or her choice of courses will meet the criteria for the combined major degree.

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## Honors program

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CANA 1F91, 3F91, 4F80, 4F99; one credit from CANA 2M90-2M99; two credits from the list of approved Canadian Studies courses (one at the second-year level and one at the third-year level).

## Year 1

CANA 1F91; one credit from the co-major discipline; one social science and one science context elective; one elective credit.

## Note:

Students whose co-major is in the humanities must take POLI 1F90 as their social science context credit and the humanities language requirement as specified by the co-major discipline. CANA 1F91 will satisfy the humanities context requirement.

## Year 2

CANA 2F12 (humanities co-majors), one credit from CANA 2P07, 2P08, 2P09, 2P10 (social science co-majors); one credit from CANA 2M90-2M99; two credits from the co-major discipline; one elective credit.

## Year 3

CANA 3F91; one credit at the 2(alpha)90 level or above from the list of approved Canadian Studies courses; two credits from the co-major discipline; one elective credit.

## Year 4

CANA 4F80, 4F99; two credits from the co-major discipline; one elective credit.

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## Pass program

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CANA 1F91, 3F91; one credit from CANA 2M90-2M99; two credits from the list of approved Canadian Studies courses (one at the second-year level and one at the third-year level). (See Notes 3 and 5, above.)

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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## Special combined major programs

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## Canadian Studies and Film Studies

In co-operation with the Film Studies program, Canadian Studies offers a special combined major program leading to a BA in Canadian Studies and Film Studies. This program offers students an

## Canadian Studies

opportunity to combine a specialized interest in film and media studies with interdisciplinary study of the broader context of Canadian culture and society.

### Honors program

#### Year 1

CANA 1F91; FILM 1F94; POLI 1F90; science context credit; one credit from FREN 1F90, 1P01, 1P02, 1P03.

#### Year 2

CANA 2F12; one credit from CANA 2M90-2M99; COMM 2P20, 2P21; FILM 2F90 and either 2F54 or 2F97.

#### Year 3

CANA 3F91; one approved CANA credit at 2(alpha)90 level or above; FILM 2F54 or 2F97; one credit from FILM 3P93, 3P94, 3P95, 3P96; one elective credit.

#### Year 4

CANA 4F80, 4F99; FILM 3F90; FILM 4F30 or 4F90; one elective credit.

### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

#### Note:

Since some courses may not be offered every year, students should consult with the directors of Canadian Studies and Film Studies before registering in year 2.

See also general program notes, above.

### Canadian Studies and French

In co-operation with the Department of French, Italian and Spanish, Canadian Studies offers a special combined major program leading to a BA in Canadian Studies and French. This program offers students an opportunity to combine a specialized interest in French Canadian culture and literature with interdisciplinary study of the broader context of Canadian culture and society.

### Honors program

#### Year 1

CANA 1F91; FREN 1F90; POLI 1F90; science context credit; one elective credit.

#### Year 2

CANA 2F12; one credit from CANA 2M90-2M99; FREN 2F00 or 2F10; FREN 2F03; one elective credit.

#### Year 3

CANA 3F91; POLI 3P16; HIST 3P98; two credits in FREN at the 2(alpha)90 level or above, including at least one credit from FREN 3P70, 3P71, 3P72; one elective credit.

#### Year 4

CANA 4F80, 4F99; two credits in FREN at 3(alpha)90 level or above, including at least one credit from FREN 4P73, 4P74, 4P87; one elective credit.

### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

#### Note:

Students exempted from FREN 1F90 who take FREN 2F00 or 2F10 in year 1 may substitute another credit in French for 2F00 or 2F10 in year 2.

See also general program notes, above.

### Canadian Studies and History

In co-operation with the Department of History, Canadian Studies offers a special combined major program leading to a BA in Canadian Studies and Canadian History. This program offers students an opportunity to combine a specialized interest in Canadian history with interdisciplinary study of the broader context of Canadian culture and society.

### Honors program

#### Year 1

CANA 1F91; either HIST 1P92 and 1P93 or 1F95; POLI 1F90; science con-

text credit; humanities language requirement (one credit from FREN 1F90, 1P01, 1P02, 1P03 strongly recommended).

#### Year 2

CANA 2F12; one credit from CANA 2M90-2M99; one credit from HIST 2P07, 2P08, 2P09, 2P10; one credit in HIST\*; one elective credit.

#### Year 3

CANA 3F91; one approved CANA credit at 2(alpha)90 level or above; two credits in HIST at 2(alpha)90 level or above\*; one elective credit.

#### Year 4

CANA 4F80, 4F99; two credits in HIST at 3(alpha)90 level or above\*; one elective credit.

\*Honors students should complete at least four credits from the following list of HIST courses: 2P07, 2P08, 2P09, 2P10, 2P94, 3P73, 3P74, 3P75, 3P82, 3P92, 3P98, 4V10-4V19.

### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

\*Pass students should complete at least three credits from the following list of HIST courses: 2P07, 2P08, 2P09, 2P10, 2P94, 3P73, 3P74, 3P75, 3P82, 3P92, 3P98.

See also general program notes, above.

### Canadian Studies and Politics

In co-operation with the Department of Politics, Canadian Studies offers a special combined major program leading to a BA in Canadian Studies and Politics. This program offers students an opportunity to combine a specialized interest in Canadian politics with interdisciplinary study of the broader context of Canadian culture and society.

Honors program

*Year 1*

CANA 1F91; POLI 1F90; science context credit; two elective credits (one credit from FREN 1F90, 1P01, 1P02, 1P03 highly recommended).

*Year 2*

One credit from CANA 2M90-2M99; one credit from CANA 2P07, 2P08, 2P09, 2P10; POLI 2F12, 2P01\*, 2P80; one elective credit.

*Year 3*

CANA 3F91; one approved CANA credit at 2(alpha)90 level or above; POLI 3P12; one and one-half credits from POLI 3F51, 3P11, 3P15, 3P16, 3P17, 3P18, 3P19, 3P28, 3P29, 3P66; one elective credit.

*Year 4*

CANA 4F80, 4F99; either POLI 3P91 or 3P92; one-half credit from POLI 3P04, 3P06, 3V00-3V09, 4P01, 4P02, 4P04, 4V00-4V09\*; one credit from POLI 4P11, 4P14, 4P15, 4P50, 4P52, 4P54, 4P65, 4V10-4V19, 4V60-4V69; one elective credit.

\* POLI 2F90 may be taken in place of 2P01 (for Pass BA) or in place of 2P01 plus one of 3P04, 3P06, 3V00-3V09, 4P01, 4P02, 4P04, 4V00-4V09 (for Honors BA).

Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree; however, since POLI 3P12 is open only to honors students, students intending to complete the pass program should substitute another one-half credit in POLI for POLI 3P12 selected from the list under year 3, above.

See also general program notes, above.

**Canadian Studies and Sociology**

In co-operation with the Department of Sociology, Canadian Studies offers a special combined major program leading to a BA in Canadian Studies and Sociol-

ogy. This program offers students an opportunity to combine a specialized interest in sociological theory and research with interdisciplinary study of the broader context of Canadian culture and society.

Honors program

*Year 1*

CANA 1F91; SOCI 1F90; science context credit; two elective credits (one credit from FREN 1F90, 1P01, 1P02, 1P03 highly recommended).

*Year 2*

One credit from CANA 2M90-2M99; one credit from CANA 2P07, 2P08, 2P09, 2P10; SOCI 2F01, 2F10; one elective credit.

*Year 3*

CANA 3F91; one approved CANA credit at the 2(alpha)90 level or above; SOCI 3F01; one credit from SOCI 3F33, 3P36, 3P46, 3P47; one elective credit.

*Year 4*

CANA 4F80, 4F99; SOCI 3P11, 3P12, 4F01; one elective credit

Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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**Prerequisite and restrictions**

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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**Description of courses**

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

CANA 1F91

**Introduction to Canadian studies**

The development of Canadian culture from the beginning of European settlement to the present. The course is interdisciplinary and examines cultural expressions drawn from Canadian literature, painting and music, as well as selected issues in Canadian social and cultural history.

*Lectures, seminar, 3 hours per week.*

CANA 2F12

**The government and politics of Canada**

(also offered as POLI 2F12)

Political institutions and processes of Canada. Major topics will include: constitution and federalism, regions and regionalism, the political attitudes and behavior of Canadians, parties and elections, and the policy process.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 1F90.

CANA 2P07

**Origins: Canadian history to 1800**

(also offered as HIST 2P07)

Social, economic, political and cultural developments in Canada from earliest French contacts to the end of the 18th century.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 2F09.

CANA 2P08

**Canada from 1800 to Confederation**

(also offered as HIST 2P08)

The main social, economic, political and cultural developments in eastern Canada in the first sixty years of the 19th century.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 2F09.

CANA 2P09

**Canada from Confederation through World War I**

(also offered as HIST 2P09)

The evolution of Canada's political, economic and social structures from the Confederation era to 1920.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students with prior credit in CANA(HIST) 2F10.



## Canadian Studies

### CANA 2P10

#### Canadian history since World War I (also offered as HIST 2P10)

An examination of economic, social and political themes and events in Canadian history since 1920. Particular attention will be paid to the ways in which class, gender, region and race/ethnicity have been significant forces in Canada's past. *Lectures, seminar, 3 hours per week.* Credit will not be granted to students with prior credit in CANA(HIST) 2F10.

### CANA 2M90-2M99

#### The Canadian experience

Study of a selected dimension of the Canadian experience focussing, in the first term, on interdisciplinary perspectives in the social sciences and, in the second, on interdisciplinary perspectives in the humanities.

#### 1993-94: (2M92) Generations: continuity and change

Issues in transition of youth and age in Canadian culture and society.

*Lectures and/or seminar, 3 hours per week.*

Prerequisite: CANA 1F91 or permission of the instructor.

### CANA 3F91

#### Canadian culture and society: interdisciplinary studies.

A fully interdisciplinary seminar on selected Canadian issues, involving faculty from various departments.

#### 1993-94: Borders and margins

A study of the concepts of "centre" and "margin" and the role of "boundaries" (or their absence) in Canadian culture and society.

*Seminar, 3 hours per week*

Prerequisite: CANA 2F91 or 2M90 or permission of the instructor.

### CANA 4F80

#### Directed reading

Directed individual or group reading and written work in an area of Canadian Studies. Students will also be required to participate in staging an annual Canadian Studies colloquium. Students are responsible for arranging their course with a supervising faculty member and must

submit a written proposal, signed by the supervisor, to the program director for approval before registration.

Restriction: Open only to CANA (combined) majors with approval to year 4.

### CANA 4F99

#### Honors thesis

Independent interdisciplinary study under the guidance of a faculty adviser. The results of the study will be presented as a thesis, to be evaluated by a faculty committee representing the disciplinary areas to which the thesis is related.

Restriction: Open only to CANA (combined) majors with approval to year 4.

Note: Consult the program director prior to registration.

#### Departmental offerings which are approved Canadian Studies credits:

### COMM 2F97

Canadian cinema  
(also offered as  
FILM 2F97)

### COMM 2P21

Canadian popular  
culture (also  
offered as FILM  
2P21)

### COMM 2P23

Mass media (also  
offered as  
SOCI 2P23)

### COMM 3P17

Politics and the  
mass media in  
Canada (also  
offered as POLI  
3P17)

### DRAM 2F97

Canadian drama

### DRAM 2P91

Canadian radio  
and television  
drama

### ECON 2F95

Canadian economic  
policy

### ECON 2P09

Canadian economic  
history  
(also offered as  
LABR 2P09)

### ECON 3P15

Public sector  
economics: taxation

### ECON 3P19

Regional  
economics

### ENGL 2F91

Canadian  
literature in English

### FILM 2F97

Canadian cinema  
(also offered as  
COMM 2F97)

### FILM 2P21

Canadian popular  
culture (also  
offered as COMM  
2P21)

### \*FREN 1F90

Language and  
literature

### \*FREN 1P01

Introductory  
French I

### \*FREN 1P02

Introductory  
French II

### \*FREN 1P03

Introductory  
French III

### \*FREN 2P85

Francophone  
women writers of  
the 20th century  
(also offered as  
WISE 2P85)

### \*FREN 3P70

French Canadian  
narrative and essay I

### \*FREN 3P71

French Canadian  
narrative and  
essay II

### \*FREN 3P72

French Canadian  
theatre

### \*FREN 4P73

French Canadian  
poetry

### \*FREN 4P74

Contemporary  
French Canadian  
narrative and essay

### \*FREN 4P87

Women and writing  
in Québec  
(also offered as  
WISE 4P87)

### GEOG 2P91

Geography of  
Canada

### HIST 2P94

Canada's evolving  
social fabric

### HIST 3P73

Canadian business  
since 1900

### HIST 3P74

Canada, a land of  
immigrants

### HIST 3P75

Canadian labor  
history  
(also offered as  
LABR 3P75)

### HIST 3P82

Canadian -  
American  
relations

### HIST 3P92

Selected aspects of  
Upper Canada/  
Ontario history,  
1784-1914

*HIST 3P98	French Canada	POLI 4P52	Personnel and finance administration in the public sector
HIST 4V10-4V19	Problems in Canadian history		
LABR 2P09	Canadian economic history (also offered as ECON 2P09)	POLI 4P54	Business-government relations
LABR 2P32	The sociology of work (also offered as SOCI 2P32)	POLI 4V10-4V19	Issues in Canadian politics
LABR 3F51	Canadian public administration (also offered as POLI 3F51)	POLI 4V60-4V69	Selected topics in Canadian public policy
LABR 3P36	Political economy of Canada (also offered as SOCI 3P36)	SOCI 2P22	Education and society
LABR 3P75	Canadian labor history (also offered as HIST 3P75)	SOCI 2P23	Mass media (also offered as COMM 2P23)
POLI 3F51	Canadian public administration (also offered as LABR 3F51)	SOCI 2P32	The sociology of work (also offered as LABR 2P32)
POLI 3P11	Urban politics and administration	SOCI 3F33	Law and society
POLI 3P15	Politics in Ontario	SOCI 3P36	Political economy of Canada (also offered as LABR 3P36)
*POLI 3P16	Politics in Québec	SOCI 3P46	Native peoples and Canadian society
POLI 3P17	Politics and the mass media in Canada (also offered as COMM 3P17)	SOCI 3P47	Race and ethnicity
POLI 3P18	Law and politics	SOCI 3P51	Gender and society (also offered as WISE 3P51)
POLI 3P19	The Canadian judicial process	VISA 2F50	Canadian art
POLI 3P28	Canadian foreign policy	WISE 2P85	Francophone women writers of the 20th century (also offered as FREN 2P85)
POLI 3P29	Canadian - American relations	WISE 3P51	Gender and society (also offered as SOCI 3P51)
POLI 3P66	Environmental policy, law and administration	*WISE 4P87	Women and writing in Québec (also offered as FREN 4P87)
POLI 4P11	Issues in local government and politics		
POLI 4P14	Federalism in Canada		
POLI 4P15	Canadian political economy		
POLI 4P50	Machinery of government		

*Note:* as many of the courses listed above have prerequisites, students should plan their programs in advance.

\*Courses which may be used to fulfil the French/French Canadian requirement (see Note 1, above).

# Chemistry

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## Officers of instruction

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### Chair

Stuart M. Rothstein

### Professors

Ian D. Brindle  
Martin S. Gibson  
J. Stephen Hartman  
Richard R. Hiatt  
Herbert L. Holland  
Jack M. Miller  
David C. Moule  
Mary Frances Richardson  
Stuart M. Rothstein  
Jan Vrbik

### Assistant professor

Kathleen M. Gough

### Research professor (honorary)

Mikio Chiba

### Adjunct professors

David Boomer  
Klaus Kaiser

### Senior demonstrator

Gail Neff

### Senior demonstrator -

Research technician  
Donna Vukmanic

### Co-ordinator, Analytical services

T.R.B. Jones

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## General information

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### Mackenzie Chown, E206

Chemistry is the study of matter and its interactions with various forms of energy. Brock students are involved in the analysis, synthesis and purification of substances; determining their structures and properties; and explaining the mechanisms of processes. The knowledge and experience gained in this study are of great value to science, technology and society.

Our programs stress chemical principles and practice through research in organic, inorganic, analytical, physical and theoretical chemistry, as well as the related fields of bio-inorganic and bio-organic chemistry and chemical physics. Special research interests include structures of metal-vitamin complexes, oxidation of organic molecules by fungi, fast reaction kinetics, photochemistry, molecular spectroscopy, nuclear magnetic resonance spectroscopy, quantum chemistry and pesticide analysis.

The facilities available in the Mackenzie Chown complex are actively used for both teaching and research. A partial list of equipment includes: Bruker AC 200 NMR Cryospectrometer for solution and high resolution solid studies, Bruker WP-80 CW NMR spectrometers; mass spectrometry facilities include an "EB" high resolution double focussing magnetic mass spectrometer, a new Kratos Concept 1S interfaced to a Kratos DS-90 data system (Eclipse computer) which in turn is connected via an Ethernet linkage to a SUN SPARC station based Kratos MACH 3 mass spectrometry workstation. Positive and negative ionization, EI, CI, FAB and dynamic FAB sources, GC, LC (particle beam and dynamic FAB) and linked scanning are available. A dedicated HP quadrupole GC/MSD is also available; 6m. Ebert grating spectrograph; Cary and Varian spectrophotometers; Spex 14018 Raman spectrometer with 15-watt argon laser; PE 225 IR and Analect FT IR spectrophotometers; preparative and analytical gas chromatographs; flash photolysis apparatus; X-ray precession and universal cameras and Nonius CAD-4 automated single crystal X-ray diffractometer with low temperature accessories; Nova 4x mini computer with graphics terminal and plotter; lasers; Perkin Elmer and Waters high pressure liquid chromatographs with data stations; Spectrametrics Spectraspan V DCP emission spectrometer with Dataspan computer; Waters Ion Chromatograph; Rudolph autopolarimeter.

SUN SPARC station, Silicon Graphics 4D30 UNIX workstation and Macintosh II series computers for theoretical computation and molecular modelling, inter-

faced via ETHERNET to the University's two new Silicon Graphics 4D340 central UNIX servers.

## Safety

Chemistry majors who wear glasses: it is strongly recommended that you secure your prescription glasses with 'hardened' lenses. (Safety glasses are required in the chemical labs.) Students in laboratory courses are advised to purchase cotton, rather than plastic, laboratory coats.

## Breakage charges

Students in laboratory courses will be charged for excessive breakage.

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## Honors program

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The honors program in Chemistry is designed to give the student a broad knowledge of chemistry as well as depth in areas in which the student is most interested. A research project must be successfully completed and a thesis written as part of the requirements for an honors degree. The honors program, and certain of the combined honors programs listed below, when taken with chemistry electives satisfy the requirements for membership in the Chemical Institute of Canada.

The honors program in Chemistry consists of 20 credits and must include: PHYS 1F20, 1F25 or 1F90 (see Note 1.); MATH 1P93, 1P94; an additional one-half credit in MATH or COSC (except MATH 1P60); CHEM 1P80, 1P81 or CHEM 1P90, 1P91 (preferred); CHEM 2P01, 2P02, 2P12, 2P22, 2P32, 2P42, 3P20, 3P21, 3P30, 3P31, 3P40, 3P51, 3P53, 4F90, 4F91; one credit from PHYS 2P20, 2P30, 2P31, 2P50; one credit from CHEM 4P14, 4P15, 4P21, 4P22, 4P31, 4P40; any additional two and one-half credits from the Faculty of Mathematics and Science (except MATH 1P60, ERSC 1F90, BIOL 1F25, SCIE 1F20 or 1F30 or ASTR 1F00).

A typical honors program:

*Year 1*

CHEM 1P80, 1P81 or CHEM 1P90, 1P91 (preferred); PHYS 1F20, 1F25 or 1F90 (preferred); MATH 1P93, 1P94; two context credits. (See Notes 1. and 2.)

*Year 2*

CHEM 2P01, 2P02, 2P12, 2P22, 2P32, 2P42; one-half credit from PHYS 2P20, 2P30, 2P31, 2P50; one-half credit in MATH or COSC (except MATH 1P60); one elective credit. (see Notes 2. and 3.)

*Year 3*

Two credits from CHEM 3P20, 3P21, 3P30, 3P31, 3P51, 3P53; CHEM 3P40; one-half credit from PHYS 2P20, 2P30, 2P31, 2P50 (not taken in year 2); two elective credits. (See Notes.)

*Year 4*

One credit from CHEM 3P20, 3P21, 3P30, 3P31, 3P51, 3P53 (not taken in year 3); CHEM 4F90, 4F91; one credit from CHEM 4P14, 4P15, 4P21, 4P22, 4P31, 4P40; one elective credit.

*Notes:*

1. PHYS 1F90 with a lab is preferred; note that professional schools may require an introductory physics credit with a lab.

2. The electives will normally be chosen from one or more credits taken in humanities or one in social science and the remainder normally from the Faculty of Mathematics and Science (except MATH 1P60, ERSC 1F90, BIOL 1F25, SCIE 1F20 or 1F30 or ASTR 1F00).

3. MATH 2F95 is recommended for students interested in physical chemistry.

4. CHEM 3P40 is strongly recommended; the course is strongly recommended for most projects in CHEM 4F90, 4F91 and should be taken in year 3 by students intending to proceed to a year 4 thesis in CHEM.

5. One humanities and one social science credit must be taken in years 1 and 2. The remaining elective credits should be taken in one or more of the sciences or mathematics as described in Note 2 above.

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**Pass program**

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Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

The pass program in Chemistry must include: CHEM 1P80, 1P81 or CHEM 1P90, 1P91 (see Note 1.); PHYS 1F20, 1F25 or 1F90 (see Note 2.); CHEM 2P01, 2P02, 2P12, 2P22, 2P32, 2P42, 3P40; two credits from CHEM 3P20, 3P21, 3P30, 3P31, 3P51, 3P53; one credit from PHYS 2P20, 2P30, 2P31, 2P50; MATH 1P93, 1P94; an additional one-half credit in MATH or COSC (except MATH 1P60); one and one-half other credits, normally from the Faculty of Mathematics and Science (see Note 2.).

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**Concurrent BSc/BEEd**

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The Faculty of Mathematics and Science and the Faculty of Education co-operate in offering a concurrent pass BSc/BEEd program for students interested in teaching math or science at the Junior/Intermediate level; grades 4-10. Please refer to the Education-Concurrent BSc/BEEd Program listing for additional information.

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**Combined major programs**

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Combined honors and pass programs can be taken in Chemistry/Biology, Chemistry/Computer Science, Chemistry/Earth Sciences, Chemistry/Mathematics, Chemistry/Physics and Chemistry/Urban and Environmental Studies. In most of the combined major programs a research project must be successfully completed and a thesis written as part of the requirements for an honors degree. Consult the department for a combined program which will satisfy the requirements for accreditation for membership in the Chemical Institute of Canada.

A minimum of ten credits (five from each discipline) is required for a combined major pass degree and a minimum of fourteen credits (seven from each discipline) is required for a combined major honors degree.

Typical programs:

**Chemistry and Mathematics**

Honors program

*Year 1*

CHEM 1P80, 1P81 or CHEM 1P90, 1P91 (preferred); MATH 1P93 and either 1P94 or 1P95; MATH 1P12, 1P90; PHYS 1F20, 1F25 or 1F90; one context credit.

*Year 2*

CHEM 2P03, 2P12; one-half credit from CHEM 2P20, 2P32, 2P42; MATH 2F00 or 2F95; PHYS 2P20; one context credit; one elective credit.

*Year 3*

One credit from CHEM 2P20, 2P32, 2P42, 3P40; CHEM 3P51, 3P53; MATH 2F10 or 2P20, 3P20 or 3F94; MATH 2F96; one year 3 credit in CHEM or MATH.

*Year 4*

CHEM 4F90, 4F91; one credit from CHEM 3P20, 3P21 or 3P30, 3P31; two year 3 or year 4 MATH credits.

An honors program must include a minimum of three credits numbered 3(alpha)90 or above.

Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Chemistry and Physics**

Honors program

*Year 1*

CHEM 1P80, 1P81 or CHEM 1P90, 1P91 (preferred); PHYS 1F20, 1F25 or 1F90 (preferred); MATH 1P93, 1P94; two context credits.

## Chemistry

### Year 2

CHEM 2P03, 2P12; one-half credit from CHEM 2P20, 2P32, 2P42; PHYS 2P50; one and one-half credits from PHYS 2P20, 2P21, 2P30, 2P31; MATH 2F95; one-half elective credit.

### Year 3

One credit from CHEM 2P20, 2P32, 2P42 not taken in year 2; one-half credit from CHEM 3P20, 3P30, 3P40, 3P51, 3P53; PHYS 3P50, 3P70; one-half credit from PHYS 3P20, 3P91, 3P92; PHYS 3P95 and 3P96 or MATH 2F96; one elective credit.

### Year 4

PHYS 4F90, 4F91 or CHEM 4F90, 4F91; one-half credit from CHEM 3P20 or 3P30; one credit in CHEM or PHYS at the year 3 or 4 level; one-half credit from PHYS 3P20, 3P31, 4P61, 4P70; one elective credit. An honors program must include a minimum of three credits numbered 3(*alpha*)90 or above.

### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

For combinations with Biological Sciences, Earth Sciences and Urban and Environmental Studies, see the entry under the other department. For combined majors in other areas of concentration please consult the departments.

### Biochemistry

See separate calendar entry under Biochemistry.

### Biotechnology

See separate calendar entry under Biotechnology.

*Note:* Students planning to pursue graduate studies in Chemistry are strongly recommended to take all of: CHEM 4P14, 4P21, 4P22, 4P31 and 4P40 in addition to CHEM 4F90 and 4F91. Chemistry majors planning to pursue graduate studies in biochemistry or biological chemistry are strongly recommended to take CHEM 4P27 in place of CHEM 4P14.

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### Master of Science (MSc) program

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Candidates with either an honors or a pass BA or BSc degree in Chemistry, or equivalent, may apply to the chair of the department for entry into this program. Candidates holding a pass degree will be required to take a qualifying year, similar to year 4 of the honors program, before formally enrolling for the MSc degree. Candidates may be required to write Graduate Record Aptitude and Advanced Chemistry Examinations.

Candidates with an honors degree or who have completed a qualifying year, require a minimum of one year of full-time study.

The following research fields are currently represented:

**Inorganic chemistry:** nuclear magnetic resonance both in solution and in the solid state; halogen redistribution and ionic-covalent equilibria in boron trihalide adducts; fluoroboron cations; Magic Angle Spinning NMR of inorganic solids including silicon carbide, geological samples and fluorides. Synthesis and mass spectroscopy of organometallic compounds, including perhalogenoaromatic compounds and donor-acceptor adducts; Fast Atom Bombardment mass spectroscopy; strong hydrogen bonding to fluoride and synthetic applications in organic chemistry; X-ray structure determinations; polytypism and solid-state phase transitions.

**Organic chemistry:** synthesis of heterocyclic, aromatic and aliphatic systems; kinetics and mechanisms of auto-oxidative processes; reactions of organic free radicals in solution; transitional activation; molecular rearrangements; chemistry of electron deficient intermediates such as arynes and 1:3 dipolar species; mechanisms of thermal and photochemical rearrangements; model systems for biochemical processes; mechanism of biological reactions; biosynthetic pathways; the oxidation of organic molecules by fungi; X-ray struc-

tural studies of polymorphism in organic compounds.

**Physical and theoretical chemistry:** rovibronic analysis of electronic band spectra of polyatomic molecules; Franck-Condon calculation of geometry changes on electronic excitation; infrared and Raman spectroscopy, kinetic spectroscopy and spectrophotometry of transients produced during the flash photolysis of gases and liquids; quantum mechanical methods; atomic and molecular structure, intermolecular force and chemical reactivity calculations; applied statistics.

**Analytical chemistry:** development of analytical methods for pesticides and their degradation compounds; studies on the fate of pesticides in plants, insects, and the environment; gas chromatography/mass spectrometry and nuclear magnetic resonance applied to environmental problems; trace and ultra-trace determination of elements in complex matrices; applications of FAB mass spectroscopy in analytical chemistry; applications of analytical chemistry to archaeological problems; structure-activity relationships in toxicology.

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For further information about the MSc program see the graduate calendar.

### Graduate courses

The following courses are available in the department. A certain selection (determined, in part, by the interests of the students) will be offered each year. Further information about the courses to be offered in any year may be obtained from the chair of the department.

CHEM 5F90  
MSc research and thesis

CHEM 5P00  
Quantum chemistry--theory

CHEM 5P01  
Quantum chemistry--applications

CHEM 5P05  
Molecular spectroscopy--theory

CHEM 5P06  
Molecular spectroscopy--applications

CHEM 5P09  
Photochemistry

CHEM 5P11  
Special topics in physical chemistry

CHEM 5P15  
Nuclear magnetic resonance (NMR) spectroscopy

CHEM 5P16  
Mass spectroscopy

CHEM 5P17  
Special topics in nuclear magnetic resonance (NMR) spectroscopy

CHEM 5P18  
Special topics in mass spectroscopy

CHEM 5P19  
Organic reaction mechanisms

CHEM 5P20  
Special topics in organic chemistry

CHEM 5P21  
Advanced organic synthesis

CHEM 5P23  
Organic stereochemistry

CHEM 5P24  
Natural products chemistry

CHEM 5P27  
Advanced enzyme and coenzyme mechanisms

CHEM 5P31  
Special topics in inorganic chemistry

CHEM 5P33  
Chemistry of organometallic and coordination compounds

CHEM 5P41  
Special topics in analytical chemistry

CHEM 5P51  
Basic structural chemistry and crystallography

CHEM 5P52  
Advanced structural chemistry and crystallography

For details, see graduate calendar.

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#### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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#### Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

CHEM 1P80  
**Introduction to modern chemistry I**  
Stoichiometry and chemical bonding, descriptive inorganic and organic chemistry. Problem solving is stressed. Laboratory work includes chemical analysis and illustrative experiments in organic chemistry.

*Lectures, 3 hours per week; seminar, lab, 3 hours per week.*

Prerequisite: grade 12 chemistry required. OAC chemistry or equivalent chemistry course recommended.

Credit will not be granted to students with credit in CHEM 1F85, 1F93 or 1P90, 1P91.

CHEM 1P81  
**Introduction to modern chemistry II**  
Gas laws, thermochemistry, solutions, chemical equilibria and kinetics. Problem solving is stressed. Laboratory work includes chemical analysis and synthesis and experiments illustrating lecture topics.

*Lectures, 3 hours per week; seminar, lab, 3 hours per week.*

Prerequisite: CHEM 1P80.

CHEM 1P90  
**Chemical principles and properties I**  
General chemistry; stoichiometry; inorganic and organic structures and reactions. Laboratory work includes chemical purification and analysis and experiments in organic chemistry.

Prerequisite: 70 percent or above in an OAC chemistry or in an equivalent chemistry course required.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Credit will not be granted to students with credit in CHEM 1F93, 1F85, or either of 1P80, 1P81.

CHEM 1P91  
**Chemical principles and properties II**  
General chemistry; introduction to physical chemistry; thermochemistry, chemical equilibria, kinetics and analysis. Laboratory work includes experiments in chemical analysis and synthesis, thermochemistry and chemical kinetics.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 1P90.

CHEM 2P01  
**Laboratory techniques in chemistry I**  
Experiments include use of computers for data collection and analysis; synthesis, separation, and analysis of organic and inorganic compounds; introduction to instrumental techniques; measurement of kinetic, thermodynamic and equilibrium properties. Experiments will be selected to take into account student course patterns and experiments performed in previous chemistry courses.

*Lecture, one hour per week, lab, 6 hours per week.*

Prerequisite: CHEM 1P81 or 1P91.

CHEM 2P02  
**Laboratory techniques in chemistry II**  
A continuation of CHEM 2P01.

*Lecture, one hour per week; lab, 6 hours per week.*

Prerequisite: CHEM 2P01

## Chemistry

### CHEM 2P03

#### Laboratory techniques in chemistry III

A selection of experiments and lectures from CHEM 2P01 and 2P02, spread over both Fall and Winter terms.

*Lecture, 1 hour every other week, lab, 3 hours per week, for 24 weeks.*

Prerequisite: CHEM 1P81 or 1P91.

Credit will not be granted to students with prior credit in CHEM 2P01, 2P02.

### CHEM 2P12

#### Physical chemistry I: equilibrium and change

Chemical thermodynamics, particularly the role of enthalpy and entropy, in understanding physical and chemical change in ideal and non-ideal systems; rates of chemical reactions and the processes responsible for chemical change.

*Lectures, 4 hours per week.*

Prerequisites: CHEM 1P80, 1P81 or CHEM 1P90, 1P91; MATH 1P93, 1P94.

Co-requisite: CHEM 2P01 or 2P03 (except for BTEC majors).

Credit will not be granted to students with credit in CHEM 2F10.

### CHEM 2P20

#### Principles of organic chemistry

An introduction to the principles and techniques of organic chemistry; correlation of reactions and physical properties of organic compounds with structure and energetic concepts. Laboratory work includes organic preparations and techniques.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 1P80, 1P81 or CHEM 1P90, 1P91.

Credit will not be granted to students who have prior credit in CHEM 2P22.

### CHEM 2P21

#### Principles of bio-organic chemistry

Organic chemistry of selected groups of natural products; their biological origin and significance. Introduction to applications of spectroscopy in organic chemistry and biochemistry. Laboratory work includes organic syntheses and characterization and organic analysis.

*Lectures, 3 hours per week, lab, 3 hours per week.*

Prerequisite: CHEM 2P20.

### CHEM 2P22

#### Organic chemistry

An introduction to the principles and techniques of organic chemistry; correlation of reactions and physical properties of organic compounds; structure and energetic concepts; chemistry of functional groups.

*Lectures, seminar, 4 hours per week.*

Prerequisite: CHEM 1P80, 1P81 or CHEM 1P90, 1P91.

Co-requisite: CHEM 2P01.

Credit will not be granted to students with credit in CHEM 2P20, CHEM 2P90.

### CHEM 2P32

#### Principles of inorganic chemistry

A survey of the periodic table with stress on periodicity of chemical behavior. Chemistry and reactions in aqueous solutions; structure and bonding in simple compounds; applications to biological and environmental processes.

*Lectures, seminar, 4 hours per week.*

Prerequisite: CHEM 1P80, 1P81 or CHEM 1P90, 1P91.

Co-requisite: CHEM 2P02 or 2P03.

Credit will not be granted to students with credit in CHEM 2P30.

### CHEM 2P42

#### Introduction to analytical chemistry

Introduction to separation methods such as chromatography, solvent extraction and precipitation; use of buffers for pH-control; statistical treatment of analytical data including normal distributions, significance testing and linear regression.

*Lectures, seminar, 4 hours per week.*

Prerequisite: CHEM 1P80, 1P81 or CHEM 1P90, 1P91.

Co-requisite: CHEM 2P02 or 2P03 (except BTEC majors).

Credit will not be granted to students with credit in CHEM 2P40, 2P41, 2P92.

### CHEM 2P63

#### Introduction to biophysical chemistry

(also offered as BTEC 2P63)

The properties of colloidal systems applied to proteins and nucleic acids. Physical photochemistry, electrochemistry and kinetics applied to biological systems.

*Lectures, 3 hours per week; lab, 3 hours per week.*

### CHEM 2P98

#### Undergraduate research

Undergraduate research project carried out either in the department under the supervision of a faculty member, or as an employee in chemical industry or other suitable laboratory. (If both CHEM 2P98 and CHEM 3P98 are taken, only one of these may be based on work done in the department.)

Restriction: Open only to CHEM (single or combined) majors.

### CHEM 3P20

#### Structure and reactivity of organic molecules

Further consideration of spectroscopic techniques in organic chemistry; organic stereochemistry and reaction mechanisms; synthetic methods. Laboratory work includes: selected experiments in organic synthesis and structure determination with emphasis on spectroscopic methods.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 2P20 or 2P22 or permission of the department.

Co-requisite: CHEM 3P40 recommended.

### CHEM 3P21

#### Organic reactions

The chemistry of acyclic, cyclic and heterocyclic compounds. Reactive intermediates. Design of organic synthesis. Molecular rearrangements. Free radical chemistry; introduction to organic photochemistry and electrochemistry.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 3P20.

### CHEM 3P30

#### Main group inorganic chemistry

Systematic inorganic chemistry of the non-transition elements with emphasis on structure, bonding and reactivity in inorganic and organometallic compounds; inorganic reaction mechanisms. Selected experiments in inorganic synthesis; use of modern physical methods for determination of composition, structure and bonding.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisites: CHEM 2P32, 2P42. CHEM 2P12, 2P22 and 2P20 should be

taken concurrently if not taken previously.

Co-requisite: CHEM 3P40 recommended.

#### CHEM 3P31

##### Transition metal chemistry

A continuation of CHEM 3P30, emphasizing the transition elements; introduction to ligand field theory.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 3P30.

#### CHEM 3P40

##### Instrumental methods of analysis

An introduction to the use of instrumental methods in qualitative and quantitative analysis, including methods such as: chromatography, mass spectrometry, nuclear magnetic resonance spectroscopy, dispersive and fourier transform IR spectroscopy, visible and ultraviolet spectrophotometry, atomic absorption and emission spectroscopy, differential pulse polarography, cyclic and stripping voltammetry, etc. The laboratory will concentrate on these techniques using, in most cases, microprocessor or microcomputer controlled instrumentation and including computerized data manipulation.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 2P42.

#### CHEM 3P51

##### Quantum chemistry

Rigid rotor, harmonic oscillator, atomic structure, molecular orbital theory (diatomics and polyatomics), simple group theory. Introduction to FORTRAN 77.

*Lectures, 3 hours per week; tutorial, 3 hours per week.*

Prerequisite: CHEM 2P12.

#### CHEM 3P53

##### Atomic and molecular spectroscopy and photochemistry

Group theory, electromagnetic radiation, spectroscopic transitions, rotational far IR, microwave and Raman spectroscopy, vibrational near IR and Raman spectroscopy, atomic and molecular electronic, visible and UV spectroscopy, non-radiative photophysical processes.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 3P51.

#### CHEM 3P60

##### Industrial chemistry

Principles and practice of industrial chemistry. A survey of the chemical industry, pollution control, plant design, corrosion and similar topics. Selected industrial processes will be discussed in detail. Tours of chemical plants and industrial laboratories will be an integral part of the course.

*Lectures, 3 hours per week; seminar and plant tours, 3 hours per week.*

Prerequisite: CHEM 2P42.

Co-requisite: CHEM 2P32.

Credit will not be granted to students with credit in CHEM 3P92.

#### CHEM 3P62

##### Bio-organic chemistry

(also offered as BTEC 3P62)

The biosynthesis of the natural products of secondary metabolism. Introduction to the use of enzymes and other biological reagents in organic synthesis.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 2P21.

#### CHEM 3P63

##### Protein and nucleic acid chemistry

(also offered as BTEC 3P63)

The chemical synthesis and organic chemistry of proteins, enzymes and nucleic acids; their isolation and purification.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: CHEM 2P21.

#### CHEM 3P98

##### Undergraduate research

Undergraduate research project carried out either in the department under the supervision of a faculty member or as an employee in chemical industry or other suitable laboratory.

Restriction: Open only to CHEM (single or combined) majors.

Prerequisite: satisfactory completion of year 2 in the chemistry degree program and permission of the department.

Note: If both CHEM 2P98 and CHEM 3P98 are taken, only one of these may be based on work done in the department.

*The following two courses are normally taken together in the same year and both must be taken to obtain credit.*

#### CHEM 4F90

##### Research project

Experimental or theoretical research to be carried out under the supervision of a member of the staff.

Restriction: Open only to CHEM (single or combined), BCHM, BTEC and ENVIS majors with approval to year 4.

Prerequisite: permission of the chair; CHEM 3P40 is strongly recommended for most projects.

#### CHEM 4F91

##### Thesis

This thesis will incorporate the results of the research and will form the basis for a seminar to be presented by the student.

Restriction: Open only to CHEM (single or combined), BCHM, BTEC and ENVIS majors with approval to year 4.

Prerequisite: permission of the chair. CHEM 3P40 is strongly recommended for most projects.

#### CHEM 4P14

##### Statistical thermodynamics

Systems of independent particles, chemical equilibrium, partition functions for atoms and molecules, nuclear spin statistics, fluctuations, thermodynamic properties of crystals, real gases, metals.

*Lectures, seminar, 3 hours per week.*

Prerequisite: CHEM 3P51. CHEM 3P53 should be taken concurrently if not taken previously.

Credit will not be granted to students with credit in CHEM 410.

#### CHEM 4P15

##### Principles of polymer, colloid and surface chemistry

Physical properties of polymers and polymer solutions; polymerization kinetics and mechanisms, polymer engineering; properties of colloids; stability of colloidal systems; properties of interfaces, monomolecular films, adsorption, chemisorption, catalysis.

*Lectures, 3 hours per week.*

Prerequisites: CHEM 2P12 and any two third-year half credits in CHEM.



## Chemistry

### CHEM 4P21

#### Organic reactions and synthesis

The disconnection approach to organic synthesis. Problems of chemo-, regio- and stereo-selectivity. Appreciation of elaborate syntheses. Synthetic topics from the recent literature.

*Lectures, seminar, 3 hours per week.*

Prerequisite: CHEM 3P21.

Credit will not be granted to students with credit in CHEM 420.

### CHEM 4P22

#### Organic reactions and mechanisms

The application of reaction mechanisms in organic chemistry. Topics may include physical organic chemistry, frontier orbital theory or stereo electronic control of reactions.

*Lectures, seminar, 3 hours per week.*

Prerequisite: CHEM 3P21.

Credit will not be granted to students with credit in CHEM 420.

### CHEM 4P27

#### Enzyme and coenzyme mechanisms

Hydrolytic and other processes catalyzed by enzymes lacking non-protein prosthetic groups; transferase reactions involving biotin, pyridoxal phosphate, thiamine pyrophosphate, folic acid and cobalamin; oxidation mechanisms involving pyridine nucleotides, flavoenzymes, hydroperoxidases and oxygenases; chemical patterns shown in biosynthetic pathways.

*Lectures, seminar, 3 hours per week.*

Prerequisites: BCHM 3P01, 3P02 and CHEM 2P21.

### CHEM 4P40

#### Scientific instrumentation

Review of the use of electronic components and circuits for measurements and control; analog and digital measurements, instrument optics. Application to spectroscopic, electrochemical and other scientific instrumentation used for analysis, measurement or control.

*Lectures, 3 hours per week.*

Prerequisite: permission of the instructor.

### CHEM 4P67

#### Biophysical techniques

(also offered as BCHM 4P67 and BTEC 4P67)

Modern instrumental methods of biotechnology. The course will emphasize understanding theories underlying commonly-used techniques. Topics to include: optical, X-ray, NMR and mass spectral techniques, membrane chemistry and electrophoresis, computer modeling methods.

*Lectures, seminar, 4 hours per week.*

Prerequisite: CHEM 2P21 or 2P22 or consult the instructor for permission to register.

### CHEM 4P68

#### Biotransformations

(also offered as BTEC 4P68)

The organic reactions carried out by isolated enzymes, fungal cultures and bacteria. The production of pharmaceutical, agricultural and industrial chemicals by biological processes.

*Lectures, 3 hours per week.*

Prerequisite: CHEM 3P62 or 3P63.

### CHEM 4V30-4V35

#### Special topics in inorganic chemistry

Selected topics in advanced inorganic chemistry.

*Lectures, seminar, 3 hours per week.*

Prerequisite: CHEM 3P31.

### 1993-94: (4V33) Solid state inorganic chemistry

### CHEM 4V41-4V45

#### Special topics in analytical chemistry

*Lectures, seminar, 3 hours per week.*

Prerequisite: CHEM 3P40.

## Child Studies

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### Officers of instruction

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*Director*

Zopito Marini

*Associate professor*

Zopito Marini

*Assistant professor*

Katherine Covell

*Lecturer*

Violet Shuart

*Adjunct assistant professors*

Margaret Ogilvie

Frances Owen

*Co-ordinator*

Rosamund Battye

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### General information

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*Mackenzie Chown, D332*

Students interested in the program must apply to a common Child Studies first year. Year 1 courses are CHST 1F90, PSYC 1F90; one humanities and one science context credit; one elective credit. Following successful completion of year 1, students may apply to one of the three program streams; the pass BA program, the honors BA program and the concurrent BA/BEEd program. These are limited enrolment programs and applicants must have the approval of the Director of Child Studies.

The minimum requirement for admission to Child Studies year 1 is six OAC credits, or equivalent, with English as a required subject and a minimum overall average of 75 percent. Application to year 2 pass BA program requires a minimum average of 65 percent in year 1 required courses (CHST 1F90, PSYC 1F90). Admission to year 2 is by appli-

cation to the Child Studies program. Application to honors BA in year 2 requires a minimum 68 percent average in required year 1 courses (CHST 1F90, PSYC 1F90). Application to the concurrent BA/BEEd program is at year 2 only, with a maximum of 8 credits. These credits must include PSYC 1F90, CHST 1F90. Applicants must have a minimum 75 percent overall average. As all three programs have limited enrolments, admission is not guaranteed by attainment of the minimum average requirement. However, students who graduated from high school as Ontario Scholars (or the equivalent) and who maintain an 80 percent average in their common Child Studies first year will normally be accepted into the program of their choice.

The BA program is designed for students wishing to obtain an understanding of child development theory and its applications. This program is broadly based, offering an integration of psychological, sociological and educational perspectives.

Applicants should note that the Child Studies BA is not equivalent to an Early Childhood Education diploma and will not directly lead to certification as a pre-school teacher.

Normally, students are accepted into the BA/BEEd program only on a full-time basis and are expected to follow the prescribed program outline. The Child Studies director may grant part-time status in extenuating circumstances.

The BA/BEEd program combines the BA program with teacher education for persons who wish to teach at the primary and junior levels. Students who complete this stream and meet other Ministry requirements may be recommended to the Ministry of Education for teaching certification in Ontario. Because the BA/BEEd program integrates teacher education courses with academic courses, the student should note that the Pre-service Education courses are credited toward the BEEd while the other courses are credited to the BA. For this reason, a student who transfers out of the BA/BEEd program may not have credit in Pre-service Education courses applied to a BA de-

gree. Students should refer to the calendar section of the Faculty of Education for further details on the teacher education program.

Students may still declare honors BA intent in year 3 if they have a minimum 70 percent in required courses. Students may re-enter the BA/BEEd program in year 3 if: (1) their overall academic average is 75 percent or above; (2) there is room in the program. All decisions are made on an individual basis upon application to the Director of the Child Studies program. Students failing to maintain the required average in any CHST program may request an opportunity to upgrade their marks and to be reinstated. A request to upgrade may be granted only once.

Applicants holding an Early Childhood Education diploma from a college of applied arts and technology with which an agreement has been reached (currently Niagara, Lambton and Mohawk colleges) and who also have achieved at least 75 percent standing, may receive up to a maximum of four and one-half credits in the concurrent BA/BEEd program. Applicants from Ryerson and colleges of applied arts and technology must have an overall average of 75 percent or better in a two-year program to be considered for admission and possible transfer of credits. All applicants must take CHST 1F90.

### *Teachable Subjects*

Students wishing to apply to teacher education programs in provinces other than Ontario are advised to check the admission requirements in the pertinent faculties of Education with regard to teachable subjects. Students wishing to apply to teacher education programs in Ontario who do not take a minimum of three elective credits in courses designated as teachable subjects in one area will be restricted to certification in primary/junior teaching.

## Child Studies

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### Honors BA program

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This is a limited enrolment program. Entrance into the honors BA is conditional on approval by the director; approval will be based on average. Students must apply to complete either a thesis or a project for an honors degree.

Applicants for honors Child Studies year 4 must complete a Child Studies year 4 application form in addition to the University honors application form.

#### Year 1

CHST 1F90; PSYC 1F90; one humanities and one science context credit; one elective credit.

#### Year 2

CHST 2F10, 2P20; SOCI 1F90; MATH 1F92 or PSYC 2F24; one and one-half elective credits.

#### Year 3

CHST 2P91, 3P10; only one half-credit from CHST 3P23, 3P24, 3P92, 3P94, 3Q94; only one half-credit from CHST 3P11, 3P25, 3P65; three elective credits.

#### Year 4

CHST 4F97 or 4F99; CHST 4P10, 4P30; one credit from CHST 3F96, 3P92, 3P94, 3Q94, 3V90-3V91, 4P31, 4P32, 4P95, 4V35-4V36, PSYC 4F11, 4P41; two elective credits.

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### Pass BA program

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This is a limited enrolment program. Child Studies majors require a minimum 65 percent cumulative average in required courses to progress to years 2 and 3. Students who wish to transfer into the Child Studies program should apply to the director.

The following courses will be used to calculate the required CHST average: CHST 1F90, 2F10, 2P20, 2P91, 3P10 and all CHST courses; SOCI 1F90, PSYC 1F90; MATH 1F92 or PSYC 2P24.

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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### Concurrent pass BA/Bed program

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Students in the BA/Bed program must maintain a 75 percent overall average in all academic grade-marked courses.

The program consists of fifteen credits toward the BA and five teacher education credits over a four-year period but because of the structure of the education courses, the credits are not evenly distributed across each year.

#### Year 1

CHST 1F90; PSYC 1F90; one humanities and one science context credit; one elective credit.

#### Year 2

CHST 2F10, 2P20; EDUC 8Y04, 8Y05, 8P06; MATH 1F92 or PSYC 2F24; SOCI 1F90; one elective credit.

#### Year 3

CHST 2P91, 3P10, 3P50; only one-half credit from CHST 3P23, 3P24, 3P92, 3P94 or 3Q94; only one-half credit from CHST 3P11, 3P25 or 3P65; one credit from EDUC 2F00, 2F01, 3F01; one-half credit from EDUC 8Y34, 8Y35, 8Y36; one elective credit.

#### Year 4

EDUC 8D09, 8F08, 8P30, 8Y31, 8Y32; one elective credit.

#### Note:

The elective credit in year 4 must be completed in the evening to avoid timetable conflicts with education requirements.

All Child Studies majors are encouraged to select electives from other departments to broaden their academic experience. Suggested electives include:

ENGL 2F10; HLST 2F50; LING 2F95; PHED 1P91, 1P92, 1P93, 1P94, 2P00, 2P02, 2P05, 2P07, 3P04, 3P07, 3P41; PSYC 2F20, 2P94; RECL 1P00, 1P02,

1P06; SOCI 2P22, 2P52; THEA 2F10, 3F09. Prerequisites must be met. PHED courses are subject to enrolment limits.

Recommended electives for further study in speech-language pathology:

LING 1F91, 2F95, 2P50, 2P51, 3F94, 3F99, 4F02 and one of 4F01, 4F03.

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### Combined major program

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Students may take a combined degree (honors or pass) in Child Studies and a co-major discipline. The requirements in Child Studies are the same as for a single Child Studies major. For requirements in the co-major discipline the student should consult the relevant department. It should be noted that not all departments provide a combined major option.

A minimum of five credits from the co-major is required and no course may be used to satisfy the requirements of both Child Studies and the co-major discipline.

### Combined major program in Child Studies and Psychology

#### Year 1

CHST 1F90; PSYC 1F90; one humanities and one science context credit; one elective credit.

#### Year 2

CHST 2F10, 2P20; SOCI 1F90; PSYC 2F23; one PSYC credit numbered 2(alpha)00-2(alpha)99; one-half elective credit.

#### Year 3

CHST 2P91, 3P10; one half-credit from CHST 3P23, 3P24, 3P92, 3P94 or 3Q94; one-half credit from CHST 3P11, 3P25 or 3P65; two year 3 PSYC credits (PSYC 3F40 required for entrance to year 4); one elective credit.

#### Year 4

CHST 4P10, 4P30 and either 4F97 or 4F99; one credit from CHST 3F96, 3P92, 3P94, 3Q94, 3V90-3V91, 4P31, 4P32, 4P95, 4V35-4V36, PSYC 4F11, 4P41;

PSYC 4P92, 4P93; one PSYC credit numbered 3(*alpha*)90 or above.

Satisfactory completion of the first three years of the combined honors program entitles a student to apply for a combined pass degree.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

#### CHST 1F90

##### Introduction to child studies

An interdisciplinary survey of theories, methods and issues involved in studying children. Topics may include the history of socialization and child study, as well as ethical, legal and philosophical issues. *Lectures, seminar, 3 hours per week.*

#### CHST 2F01

##### School learning

(also offered as EDUC 2F01)

The psychological processes involved in learning in a school setting. Current cognitive theories of learning will be applied to examples in each of the major school subject areas with emphasis on the specific nature of the learning associated with each subject. Other topics may include individual differences and problems in evaluating school learning. *Lectures, seminar, 3 hours per week.*

Co-requisite: CHST 2F10 or EDUC 1F90 or PSYC 2F12 or 2F20.

#### CHST 2F10

##### Child development

Basic concepts and contemporary issues in the development of the child, includ-

ing processes in cognitive and social-emotional patterns of change. Developmental theory and research provides the conceptual framework. The course is designed to promote the bridging of disciplines. A half-day placement per week is required for all students. School placements in the Niagara Peninsula are arranged by the CHST co-ordinator. *Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEd, BSc/

BEd, CHST (single or combined), LING (single or combined) and HLST (single) majors until date specified in BIRT guide.

Prerequisites: PSYC 1F90 and CHST 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in PSYC 2F10 or 2F12.

#### CHST 2F90

##### Child language acquisition

(also offered as LING 2F90)

Linguistic stages in the development of child language. The stages of sound system development and the development of 'grammar'. Topics include 'Parentspeak', social class and language development, pre-school and institutional language development and child L<sub>2</sub> acquisition and its effect on L<sub>1</sub>. *Lectures, seminar/lab, 3 hours per week.*

Prerequisite: LING 1F91 or PSYC 1F90.

Credit will not be granted to students with prior credit in APLI 2F90 or TESL 2F90.

#### CHST 2P20

##### Introduction to methods of research in child development

Practical, theoretical, and ethical issues in research design from basic concepts to the structure of the final report. This is not a course in statistics although statistical concepts in the context of research are examined.

Restriction: Open only to BA/BEd and CHST (single or combined) majors.

Prerequisites: PSYC 1F90 and CHST 1F90.

Co-requisite: PSYC 2F24 or MATH 1F92.

Credit will not be granted to students with prior credit in CHST 3F40, 3F41.

#### CHST 2P91

##### Theoretical and historical perspective of the child and family

Classical and contemporary readings on family life and socialization: materialist,

idealist and interactionist perspectives.

*Lectures, seminar, lab, 3 hours per week.*

Restriction: Open only to BA/BEd and CHST (single or combined) majors until date specified in BIRT guide.

Prerequisites: CHST 2F10, SOCI 1F90.

Credit will not be granted to students who have prior credit in CHST 3F21, 3P21, 3P51, SOCI 3F21, 3P21, 3P51.

#### CHST 2P94

##### Movement for the young child

(also offered as PHED 2P94)

Movement education experiences applicable to the child aged 3 to 5. Practical experience in various play situations through creative games, dance and activities with apparatus will comprise a major part of the course; it will also integrate various art forms with movement activities. Basis of movement for preschool children, motor development, role of play, creativity and suitable environment for learning will be discussed. *Lectures, lab, 3 hours per week.*

Restriction: Open only to BA/BEd, CHST (single or combined) or PHED majors until date specified in BIRT guide.

Prerequisite: PSYC 1F90 or permission of the instructor.

Note: Enrolment is limited to 40 students per section.

Credit will not be granted to students who have prior credit in CHST 292hc.

#### CHST 3F35

##### Integrating the special child

Curriculum modification and assessment tools. Topics will include assessment and intervention for children with various handicaps through the use of a variety of devices, integration techniques, task analysis, behavior management and use of community resources. *Lectures, lab, seminar, 3 hours per week; practicum required.*

Prerequisite: permission of the instructor.

Credit will not be granted to students who have prior credit in CHST 295, 380hc/381hc; not eligible for education certificate.

## Child Studies

CHST 3F96

### **Psychology of the exceptional child** (also offered as PSYC 3F96)

An integration of theoretical, experimental and clinical approaches to the development of the child with special needs; i.e., the child who is mentally retarded, perceptually handicapped. Students will be required to fulfil a supervised practicum working with an atypical child. Field trips will be arranged.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd, CHST (single or combined), LING (single or combined) and PSYC (single or combined) majors with a minimum overall average of 78 percent and a minimum of 8.0 overall credits or 3.0 credits in PSYC above PSYC 1F90. (A lower average may be accepted, depending on enrolment.)

Prerequisite: CHST 2F10 or PSYC 2F12. Note: Enrolment is limited to 35 students per section.

Credit will not be granted to students who have prior credit in CHST(PSYC) 300.

CHST 3P10

### **Methods of measurement in child development research**

Applications of measurement principles including task construction, coding and item analysis. Focus will be on observational techniques.

Restriction: Open only to BA/BEEd and CHST (single or combined) majors.

Prerequisite: CHST 2P20.

Note: Enrolment limited to 65 students per section.

Credit will not be granted to students with prior credit in CHST 3F40, 3F41.

CHST 3P11

### **Theories in developmental psychology**

(also offered as PSYC 3P11)

Current theories in developmental psychology and recent controversies and evidence concerning them. The student will study human development from an integrated approach.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd, CHST (single or combined) and PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 credits in PSYC above PSYC 1F90.

Prerequisite: CHST 2F10 or PSYC 2F12.

Note: Enrolment limited to 65 students per section.

Credit will not be granted to students who have prior credit in CHST(PSYC) 3F11.

CHST 3P20

### **Psychology of learning disabilities**

Current theoretical, methodological and remedial approaches to learning disabilities in children. Cognitive and social aspects of learning disabilities will be emphasized.

*Lectures, seminar, 3 hours per week.*

Prerequisite: CHST 2F10.

CHST 3P23

### **Psychology of parenting** (also offered as PSYC 3P23)

The determinants, varieties and consequences of parenting. The focus is on psychological research findings in contemporary parenting/parenthood issues. Topics include: the transition to parenthood, different styles of parenting, dual-career parents and abusive parents.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd, CHST (single or combined) majors and PSYC (single or combined) until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 credits in PSYC above PSYC 1F90.

Prerequisite: CHST 2F10 or PSYC 2F12.

Note: Enrolment limited to 65 students per section.

CHST 3P24

### **Contemporary issues in the child and the family**

Family life and child socialization. Topics may include: family roles, including gender roles; alternative life styles and changing family forms; demographic trends; economic considerations; linkages between family, community and the state; cross cultural variations; mating, dating and sexuality; family power, violence and abuse.

*Lectures, seminar, lab, 3 hours per week.*

Restriction: Open only to BA/BEEd and CHST (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits.

Prerequisites: CHST 2F10, 2P21.

Note: Enrolment limited to 65 students per section.

Credit will not be granted to students who have prior credit in CHST 3F21, 3P21, 3P51, SOCI 3F21, 3P21, 3P51.

CHST 3P25

### **Cognitive processes in childhood**

The development of processes of perception, attention, representation, memory, thinking and language will be investigated within an information processing framework. Emphasis on cognitive processes related to learning. Theoretical issues and empirical controversies will be investigated.

Restriction: Open only to BA/BEEd and CHST (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits.

Prerequisite: CHST 2F10.

Note: Enrolment is limited to 65 students per section.

CHST 3P36

### **Assessment and early intervention with children**

Issues in the assessment of children with emphasis on infant and preschool assessment, as well as preventative and early intervention strategies. A variety of assessment techniques will be examined, including testing, observation and rating scales.

*Lectures, seminar, 3 hours per week.*

*Practicum may be required.*

Restriction: Open only to BA/BEEd, CHST (single or combined) and PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits.

Prerequisites: CHST 2F10 or PSYC 2F12.

Note: Enrolment is limited to 35 students, on a first-come, first-served basis. Practicum may be required.

CHST 3P37

### **Assessment and intervention with families**

Theoretical, research and clinical issues pertaining to assessment and intervention with families. Interventions such as parent training, self-help groups and family counselling. Particular focus will be placed on early identification and intervention.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd,

CHST (single or combined) and PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits. Prerequisites: CHST 2F10 or PSYC 2F12.

Note: Enrolment is limited to 35 students, on a first-come, first-served basis. Practicum may be required.

#### CHST 3P50

**Focus on early childhood education I** (also offered as EDUC 3P50)

Early childhood education programs for children from birth to age eight. Topics include the historical and societal influences on early childhood education, an examination of program models derived from theories of learning and child development and research on the effectiveness of these programs.

*Lectures, seminar, 3 hours per week.*

Prerequisite: CHST 2F10.

Note: Enrolment limited to 65 students. If necessary, further sections may be opened.

Credit will not be granted to students who have prior credit in CHST(EDUC) 3F50 or 3P49.

#### CHST 3P52

**Focus on early childhood education II** (also offered as EDUC 3P52)

Methods in early childhood education programs for children from birth to age eight. Topics include a detailed examination of curricula, instructional strategies and evaluative techniques. Students will be involved in a field placement working with young children in a community setting.

*Lectures, lab/seminar, 4 hours per week.*

Prerequisite: CHST(EDUC) 3P50.

Note: Enrolment limited to 25 students, to be determined by academic standing.

#### CHST 3P56

**Maturation and development** (also offered as PSYC 3P56)

The influences of brain physiology and maturation on psychological development and vice-versa and the role of heredity in understanding human development.

*Lectures, seminars, 3 hours per week.*

Restriction: Open only to BA/BEEd, CHST (single or combined) and PSYC (single or combined) majors until date

specified in BIRT guide. Students must have a minimum of 8.0 overall credits.

Note: Enrolment limited to 65 students per section.

#### CHST 3P60

**Conflict and development** (also offered as PSYC 3P60)

An overview of the role of conflict in early human development, including the causes, types and phases of conflicts. Particular attention will be focussed on cognitive and social strategies used to resolve conflicts. Students' participation in labs and research projects will permit a detailed analysis of the positive as well as negative outcome of conflicts.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd, CHST (single or combined) and PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits.

Prerequisites: CHST 2F10 or PSYC 2F12 or consult the instructor for permission to register.

Note: Enrolment limited to 65 students per section.

#### CHST 3P65

**Thinking and development**

Current theoretical and applied issues in the development of thinking abilities with emphasis on critical and reflective thinking. Students will participate in labs and research projects. Topics include: how thinking is influenced by development, whether thinking is domain-specific or domain-general and to what extent thinking is a learnable ability.

*Lectures, seminar, lab, 3 hours per week.*

Restriction: Open only to BA/BEEd and CHST (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits.

Prerequisite: CHST 2F10.

Note: Enrolment is limited to 65 students per section.

#### CHST 3P73

**The psychology of reading** (also offered as PSYC 3P73)

Psychological processes involved in beginning and skilled reading. Current theories of reading will be presented and evaluated in the light of current research findings. Theories of reading disability

and prospects for remediation will also briefly be considered.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd, CHST (single or combined) and PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 credits in PSYC above PSYC 1F90. Prerequisites: PSYC 1F90 and one of MATH 1F92 or PSYC 2F23 (may be taken concurrently).

Note: Enrolment limited to 65 students per section. Recommended background: PSYC 2F20 or 3F08 or CHST 3P11.

Credit will not be granted to students who have prior credit in CHST(PSYC)3P88.

#### CHST 3P74

**Psychology of computers in education**

(also offered as PSYC 3P74)

Current and potential uses of computers in education will be carried out in light of current theories of child development. The emphasis is upon putting the use of computers in education on firm theoretical and empirical footing.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd, CHST (single or combined) and PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 credits in PSYC above PSYC 1F90. Prerequisite: MATH 1F92 or PSYC 2F23 (may be taken concurrently).

Recommended background: PSYC 2F20 or 3F08 or CHST(PSYC) 3P11.

Note: This is not a computer programming course. Enrolment limited to 65 students per section.

Credit will not be granted to students who have prior credit in CHST(PSYC)3P89.

#### CHST 3P92

**Gender and sexuality in childhood and adolescence**

(also offered as WISE 3P92)

Interdisciplinary perspective on gender acquisition and sexual development based on social psychological, sociological, historical and cross-cultural accounts. Special topics include child sexual abuse, juvenile prostitution and sex education.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd,

## Child Studies

CHST (single or combined) and WISE (combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits.

Prerequisite: PSYC 1F90 or SOCI 1F90 or WISE 1F90 or CHST 2F10.

Note: Enrolment is limited to 65 students per section.

### CHST 3P94

#### Public policy, law and children

The evolution of public policy and law for the protection and rights of children in Canada. Policy areas include: custody, child care, aboriginal child welfare, child abuse and neglect, young offenders, child poverty and the impact of the children's rights movement.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd and CHST (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits.

Prerequisite: Consult the instructor for permission to register.

Note: Enrolment is limited to 65 students per section.

### CHST 3Q94

#### Advanced topics in social development

(also offered as PSYC 3Q94)

Social competence, aggression, friendship and other topics in social development will be examined from a variety of developmental perspectives. Methodological and training issues relevant to the study of social development will also be examined.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd, CHST (single or combined) and PSYC (single or combined) majors until date specified in BIRT guide.

Prerequisite: CHST 2F10 or PSYC 2F12 or consult the instructor for permission to register.

Note: Enrolment limited to 35 students per section.

Credit will not be granted to students who have prior credit in CHST(PSYC) 383 or CHST 392.

### CHST 3V90-3V91

#### Directed readings

A program of study not available among the regular course offerings, designed in

consultation with the faculty member directing the course. Arrangements must be agreed upon prior to registration.

Restriction: Open only to BA/BEEd and CHST (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits.

### CHST 4F97

#### Honors project

A variety of group research projects will be undertaken, each giving the student experience with different methods of data collection and analysis.

*Lectures, seminar/lab, 3 hours per week.*

Restriction: Open only to BA/BEEd and CHST (single or combined) majors. CHST students must have year 4 approval and hold a minimum of 14.0 overall credits.

Prerequisite: CHST 3F40 or 3F41 or both 2P20 and 3P10.

Co-requisite: CHST 4P10.

### CHST 4F99

#### Honors thesis

A research project carried out under the supervision of a faculty adviser. Students must be admitted to the honors program and consult with the program director before registering for a thesis.

Restriction: Open only to BA/BEEd and CHST (single or combined) majors. CHST students must have year 4 approval and have a minimum of 14.0 overall credits.

Prerequisite: CHST 3F40 or 3F41 or both 2P20 and 3P10.

Co-requisite: CHST 4P10.

### CHST 4P10

#### Methods of data analysis

Computer applications and analyses using existing data

*Lectures, seminar/lab, 3 hours per week.*

Restriction: Open only to BA/BEEd and CHST (single or combined) majors. CHST students must have year 4 approval and hold a minimum of 14.0 overall credits.

Prerequisite: CHST 3F40 or 3F41 or both 2P20 and 3P10.

Co-requisite: CHST 4F97 or 4F99.

### CHST 4P30

#### Issues and controversies in research

A critical evaluation of social science methods and paradigms. Issues may be drawn from philosophy of science (e.g., Kuhn, Popper), sociology of knowledge (e.g., Durkheim, Marx) and from other current controversies.

*Lectures, seminar/lab, 3 hours per week.*

Restriction: Open only to BA/BEEd and CHST (single or combined) majors. CHST students must have year 4 approval and have a minimum of 14.0 overall credits.

Prerequisite: CHST 3F40 or 3P41 or both 2P20 and 3P10.

### CHST 4P31

#### Treatment alternatives for children: dynamic therapies

(also offered as PSYC 4P31)

The theoretical background, research and evaluation of current therapeutic approaches to emotionally and behaviorally disturbed children and adolescents. All students will participate in a practicum placement. Major topics: a) play therapies, including non-directive, expressive and Gestalt approaches; b) group methods, including use of modeling, goal setting and evaluation methods.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd, CHST (single or combined) and PSYC (single or combined) majors. CHST and PSYC students must have year 4 approval and have a minimum of 14.0 overall credits.

Prerequisite: CHST 2F10 or PSYC 2F12. Note: Enrolment is limited to 12 students per section.

### CHST 4P32

#### Treatment alternatives for children: cognitive and behavioral approaches

(also offered as PSYC 4P32)

Behavioral theory and techniques will be presented. Social skills training, cognitive theories, contingency management and relaxation will be included in this section. All students will participate in a practicum placement.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BA/BEEd, CHST (single or combined) and PSYC (single or combined) majors. CHST and PSYC students must have year 4 ap-

proval and have a minimum of 14.0 overall credits.

Prerequisite: CHST 2F10 or PSYC 2F12.

Note: Enrolment is limited to 12 students per section.

#### CHST 4P95

##### **Contemporary issues**

A seminar course exploring contemporary theoretical and empirical issues in child development, with presentations by various faculty and guest lecturers on specialty topics.

Restriction: Open only to BA/BEd and CHST (single or combined) majors. CHST students must have year 4 approval and have a minimum of 14.0 overall credits.

#### CHST 4P98

##### **Research seminar**

A seminar course examining research methods in special topics.

Restriction: Open only to BA/BEd and CHST (single or combined) majors. CHST students must have year 4 approval and have a minimum of 14.0 overall credits.

#### CHST 4V35-4V36

##### **Special topics seminar**

A seminar offered occasionally to complement current offerings. The specific focus will vary depending on the needs of the program and availability of a faculty instructor.

Restriction: Open only to BA/BEd and CHST (single or combined) majors. CHST students must have year 4 approval and hold a minimum of 14.0 overall credits.



# Classics

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## Officers of instruction

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*Chair*  
TBA

*Professors*  
Alan D. Booth  
Noel D. Robertson  
David W. Rupp

*Associate professors*  
Frederick H. Casler  
A. Victoria Soady

*Assistant professor*  
Richard W. Parker

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## General information

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*Schmon Tower, 1124*

The Classics department offers two types of courses: 1) courses in Greek or Latin language and literature and 2) courses in Classics, embracing ancient civilization in all its aspects--literature, philosophy, education, history, religion and art and archaeology. Classics courses require no knowledge of Greek or Latin. The department has special resources for teaching both languages and civilization. New methods of language instruction have been tested and refined in the introductory Greek, Latin and Hebrew courses. Summer study tours abroad provide students with first hand knowledge of Greek and Roman culture. The Brock Museum of Cypriote Antiquities provides a representative collection of art and artifacts from the Neolithic period to the end of the Roman Empire and beyond. Archaeological training sessions are conducted every other summer in Mediterranean lands. The Niagara Peninsula Society of the Archaeological Institute of America and the Niagara Chapter of the Ontario Archaeological Society assist the department in organizing archaeological programs and lectures.

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## Honors programs

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Students seeking admission to the honors program in Classics must have a minimum grade average of 70 percent in their major credits. Only one credit from CLAS 1P91, 1P92, 1P95 and 1P97 may be counted towards an honors degree in Classics; CLAS 1P91 and 1P92 are recommended.

I. *Classical languages*: a student must take twelve credits labelled CLAS, GREE, LATI, with at least three credits numbered 2(alpha)90 or above and at least three credits numbered 3(alpha)90 or above; two of the twelve must be from CLAS 2P91, 2P92, 2P98, 2P99, 3P18, 3P19 and at least eight of the twelve must be GREE and/or LATI credits, with at least one credit in each language numbered 2(alpha)00 or above.

II. *Ancient art and archaeology*: a student must take fourteen credits labelled CLAS, GREE, LATI, with at least three credits numbered 3(alpha)90 or above; at least four of the fourteen must be GREE and/or LATI credits and another six must be in ancient art and archaeology; two of the fourteen must be from CLAS 2P91, 2P92, 2P98, 2P99, 3P18, 3P19. Ancient art and archaeology courses include: CLAS 2P30, 2P36, 2P38, 2P48, 2P93, 3P18, 3P19, 3F20, 3P22, 3P23, 4P11, 4P13, 4P14, 4P16, 4P18, 4M00-4M09, 4V20-4V25, 4F75.

III. *Classical studies*: a student must take twelve credits labelled CLAS, GREE, LATI, with at least three credits numbered 2(alpha)90 or above and at least three credits numbered 3(alpha)90 or above; two of the twelve must be from CLAS 2P91, 2P92, 2P98, 2P99, 3P18, 3P19 and at least four of the twelve must be GREE and/or LATI credits.

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## Pass programs

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I. *Classical languages*: a student must take eight credits labelled CLAS, GREE,

LATI, with at least three credits numbered 2(alpha)90 or above; five of the eight credits must be GREE and/or LATI credits and one of the eight credits must be from CLAS 2P91, 2P92, 2P98 or 2P99.

II. *Classical studies*: a student must take eight credits labelled CLAS, GREE, LATI, with at least three credits numbered 2(alpha)90 or above; two of the eight credits must be GREE and/or LATI credits and one of the eight credits must be from CLAS 2P91, 2P92, 2P98 or 2P99.

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## Combined major programs

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A student may combine either an honors or a pass program in classical studies with another major field.

The honors program consists of a minimum of seven credits labelled CLAS, GREE, LATI, with at least two credits numbered 2(alpha)90 or above and at least two credits numbered 3(alpha)90 or above; at least two credits from the seven credits must be GREE and/or LATI credits.

The pass program consists of a minimum of five credits labelled CLAS, GREE, LATI, with at least two credits numbered 2(alpha)90 or above; one of the five credits must be GREE and/or LATI.

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## Language requirement for humanities majors

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Students are advised that graduate programs in Classics require reading knowledge of French and/or German as well as competence in Greek and Latin. Therefore, students considering graduate work in Classics or classical archaeology should include French and/or German in their undergraduate curriculum.

For further information about the Classics department and its programs, students should consult the brochure *Classics at Brock*, available from the department and make an appointment with the department chair to discuss their educational objectives and career plans.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

#### CLAS 1P91

##### Greek civilization

The literature, art, thought and political evolution of ancient Greece, based on masterworks of classical literature. Slides are used to illustrate classical history and archaeology.

*Lectures, seminars, 3 hours per week.*

Credit will not be granted to students who have prior credit in CLAS 190.

#### CLAS 1P92

##### Roman civilization

The literature, art, thought and political evolution of ancient Rome, based on masterworks of classical literature. Slides are used to illustrate classical history and archaeology.

*Lectures, seminars, 3 hours per week.*

Credit will not be granted to students who have prior credit in CLAS 190.

#### CLAS 1P93

##### Culture and civilization of Central Europe: from the Prehistoric to the Carolingian period

(also offered as GERM 1P93)  
(given in English)

The cultural development of Central Europe from the earliest stone and pottery

cultures through the Bronze and Iron Ages, the Celts and Romans and the first Germanic kingdoms. The emphasis is placed on beliefs and practices, artistic style and architecture. Slides are used to illustrate the cultural evidence.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in GERM 195.

#### CLAS 1P95

##### Myths of the Greek and Roman gods

Traditional story types: nature myths, ritual myths. Diffusion of myths in the ancient world. The creation, the succession in heaven, the individual gods. Functions of myth in ancient society. Modern theories of myth.

*Lectures, seminars, 3 hours per week.*

Credit will not be granted to students who have prior credit in CLAS 196.

#### CLAS 1P97

##### Myths of the Heroic Age

Traditional story types: folktale, legend. The concept of a Heroic Age, centres and cycles of legend, pseudo-history. The response to Greek and Roman myths through the ages.

*Lectures, seminars, 3 hours per week.*

Credit will not be granted to students who have prior credit in CLAS 196.

#### CLAS 2P10

##### Fifth century Athens

The economic and social background of Western civilization's most productive epoch, with emphasis on material evidence (vases, inscriptions, the Agora, etc.). Athenian realities, 500-400 BC: domestic life, public works, law and government, industry and trade, warfare, slavery.

*Lectures, seminars, 3 hours per week.*

#### CLAS 2P11

##### Rome under the first Caesars

Economic and social conditions at the acme of Roman power, with emphasis on material evidence (coins, inscriptions, the Forum, etc.). Roman realities, 50 BC-AD 79: styles of living, law and government, work and recreation, industry and commerce, slavery.

*Lectures, seminars, 3 hours per week.*

#### CLAS 2P30

##### Origins of human culture

The growth and development of human society from the prehistoric beginnings through the complex societies of the ancient Near East and India.

*Lectures, seminar, 3 hours per week.*

#### CLAS 2P36

##### Greek archaeology

The archaeology and material culture of the ancient Greek world from the Upper Paleolithic period to the end of the Hellenistic period.

*Lectures, seminar, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P93, 1P95, 1P97, 2P30 or 2P93.

Credit will not be granted to students who have prior credit in CLAS(VISA) 2P97.

#### CLAS 2P38

##### Roman archaeology

The archaeology and material culture of the Italian peninsula and Roman Empire from the 12th century BC through the 4th century AD.

*Lectures, seminar, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P93, 1P95, 1P97, 2P30 or 2P93.

Credit will not be granted to students who have prior credit in CLAS(VISA) 2P97.

#### CLAS 2P48

##### Greek sanctuaries

The historical development of Greek sanctuaries. Rural shrines in different regions; civic shrines in different city-states; ethnic and Panhellenic shrines. Healing shrines and other sacred places; patterns of civic worship; the rise and fall of Delphi and Olympia. Emphasis on the interplay between tradition and changing needs and values.

*Lectures, seminar, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97.

Credit will not be granted to students who have prior credit in CLAS 4P12.

#### CLAS 2P49

##### The mystery religions and the background of Early Christianity

Initiation and secret societies; ethical teaching and the afterlife; purification and asceticism; ecstasy, mysticism, conversion; withdrawal, persecution and

## Classics

apocalyptic beliefs. Readings from Greek and Roman sources to illustrate the Eleusinian and Dionysiac mysteries orphics and Pythagoreans, Isis, Mithras, Gnosticism, local sects in Palestine and Asia Minor; readings from Jewish and Christian sources.

*Lectures, seminars, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97.

### CLAS 2P61

#### **Women in the Ancient World**

(also offered as WISE 2P61)

Problems and issues of particular relevance to women in Greek and Roman society. Topics will include: social, political and legal rights; prostitution; religious duties; marriage and children; birth control and abortion.

*Lectures, seminar, 3 hours per week.*

### CLAS 2P62

#### **The politics of gender in Archaic and Classical Greece**

(also offered as WISE 2P62)

Social issues of Ancient Greece as viewed from a modern perspective. Topics include: familial bonding; female and male identity; domestic and civil violence; sexuality and social status; power dynamics within the family and city-state.

*Lectures, seminar, 3 hours per week.*

### CLAS 2P91

#### **The history of early Greece**

The social and political history of the Greek world down to 450 BC Minoans and Mycenaeans, the Dark Age, the colonizing period, the tyrants, the rise of Sparta, the Persian wars and the Athenian Empire. Readings from Greek historians and documents in translation.

*Lectures, seminars, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97.

Credit will not be granted to students who have prior credit in CLAS 290, 2P88.

### CLAS 2P92

#### **The history of Classical Greece**

The social and political history of the Greek world, 450-323 BC. The great war between Athens and Sparta, the rivalry of the city-states, the rise of national states, Alexander the Great. Readings from Greek historians and documents in translation.

*Lectures, seminars, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97.

Credit will not be granted to students who have prior credit in CLAS 290, 2P89.

### CLAS 2P93

#### **Field archaeology**

An introduction to basic archaeological theory, field techniques and procedures and to the study of archaeological materials.

*Lectures, seminars, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97 or VISA 1F90 or permission of the instructor.

### CLAS 2P94

#### **Education in the Greek-speaking world**

The development of educational institutions in the Greek-speaking world and at Athens in particular, together with a study of Greek educational policies, practices and theories.

*Lectures, 3 hours per week.*

Prerequisites: GREE 1F00 and one of CLAS 1P91, 1P95 or permission of the instructor.

Credit will not be granted to students with prior credit in CLAS 2F96.

### CLAS 2P95

#### **Education in the Latin-speaking world**

The development of educational institutions in the Latin-speaking world and at Rome in particular, together with a study of Roman educational policies, practices and theories.

*Lectures, 3 hours per week.*

Prerequisites: LATI 1F00 and one of CLAS 1P92, 1P93, 1P97 or permission of the instructor.

Credit will not be granted to students who have prior credit in CLAS 2F96.

### CLAS 2P98

#### **History of the Roman Republic**

The history of Rome to the battle of Actium (31 BC), with emphasis on social and political developments from the Gracchi to Julius Caesar.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 1F00 and one credit from CLAS 1P91, 1P92, 1P93, 1P95, 1P97 or permission of the instructor.

Credit will not be granted to students with prior credit in CLAS 2F91.

### CLAS 2P99

#### **History of the early Roman Empire**

The history of Rome from the battle of Actium to the death of Marcus Aurelius (AD 180), with emphasis on social and political developments.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 1F00 and one credit from CLAS 1P91, 1P92, 1P93, 1P95, 1P97 or permission of the instructor.

Credit will not be granted to students with prior credit in CLAS 2F91.

### CLAS 3F20

#### **Greek art and architecture** (also offered as VISA 3F20)

Greek art and architecture from the Bronze Age through the Hellenistic period within the framework of historical and cultural change.

*Lectures, seminars, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97 or VISA 1F90.

Credit will not be granted to students who have prior credit in CLAS(VISA) 298.

### CLAS 3P00

#### **Homer and Greek epic** (given in English)

The two heroic epics of Homer, *The Iliad* and *The Odyssey*. Topics for discussion include: the conventions of epic, the oral transmission of epic verse and the Homeric concept of the gods.

*Lectures, seminars, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97.

Credit will not be granted to students who have prior credit in CLAS 292.

### CLAS 3P01

#### **Vergil and the literary epic**

Literary epics inspired by the works of Homer. The *Argonautica* of Apollonius and the *Pharsalia* of Lucan are used to frame a lengthy treatment of Vergil's masterful and patriotic epic of Rome, the *Aeneid*.

*Lectures, seminars, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97.

Credit will not be granted to students who have prior credit in CLAS 292.

### CLAS 3P02

#### **Greek tragedy**

The origins of tragedy and its development as entertainment and literature

through the Classical period. Works studied may include: Aeschylus, *The Oresteia*; Sophocles, *Oedipus Rex* and *Oedipus at Colonus*; and Euripides, *Medea* and *Hippolytus*.

*Lectures, seminars, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97 or DRAM 1F93. Credit will not be granted to students who have prior credit in CLAS 294.

#### CLAS 3P04

**Greek and Roman comedy and satire**  
The comedies of Aristophanes, the satires of Horace and Juvenal and the *Satyricon* of Petronius.

*Lectures, seminar, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97 or DRAM 1F92. Credit will not be granted to students who have prior credit in CLAS 3P92 or 3P03.

#### CLAS 3P18

**The Ancient Near East: 10,000-1150 BC**

The history and material culture of Egypt, Syro-Palestine, Anatolia, Mesopotamia and Iran from the advent of food production through the Late Bronze Age.

*Lectures, seminar, 3 hours per week.*

Prerequisite: one credit from CLAS 1P91, 1P92, 1P93, 1P95, 1P97 or 2P51 or permission of the instructor.

Credit will not be granted to students who have prior credit in CLAS 3F10.

#### CLAS 3P19

**The Ancient Near East: 1150-330 BC**

The history and material culture of Egypt, Syro-Palestine, Anatolia, Mesopotamia and Iran from the beginning of the Iron Age through the conquest of Alexander the Great.

*Lectures, seminar, 3 hours per week.*

Prerequisite: one credit from CLAS 1P91, 1P92, 1P93, 1P95, 1P97 or 2P51 or permission of the instructor.

Credit will not be granted to students with prior credit in CLAS 3F10.

#### CLAS 3P22

**The art and architecture of Iron Age Italy and the Roman Republic**  
(Also offered as VISA 3P22)

The art and architecture of the cultures of the Italian peninsula, in the first millennium BC, within the framework of cultural change and external influences.

*Lectures, seminar, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P93, 1P95, 1P97 or VISA 1F90.

Credit will not be granted to students who have prior credit in CLAS/VISA 299 or 3F21.

#### CLAS 3P23

**The art and architecture of Rome in the Imperial Age**

(also offered as VISA 3P23)

Roman art and architecture from Augustus to Late Antiquity. Christian art and architecture and the influence of Roman aesthetics on the Renaissance and beyond.

*Lectures, seminar, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P93, 1P95, 1P97 or VISA 1F90.

Credit will not be granted to students who have prior credit in CLAS/VISA 299 or 3F21.

#### CLAS 3P48

**Religion and society in the Ancient World**

The main patterns of religious behavior and belief in the ancient Near East, Greece and Rome with special reference to social functions. Topics will include: sacrifice, seasonal festivals, the consecration of the social order, household and kinship rites, the cult of the dead.

*Lectures, seminars, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97.

Credit will not be granted to students who have prior credit in CLAS 350.

#### CLAS 3P49

**Religion and the individual in the Ancient World**

Personal religion and private rites and beliefs in the ancient Near East, Greece and Rome. Topics will include: magic, healing, omens and prophecy, miracles and epiphanies, the cult of heroes, the high god, moral dictates and the afterlife, revelation and conversion, mysticism.

*Lectures, seminars, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P95, 1P97.

Credit will not be granted to students who have prior credit in CLAS 350.

#### CLAS 3P93

**Historical linguistics**

The development of ancient writing systems (hieroglyphs, syllabaries and alphabets) into modern scripts with emphasis on Egyptian hieroglyphs, cuneiform, Phoenician and the Greek and Latin alphabets. Also a study of language change, the comparative method and reconstruction of ancient languages.

*Lectures, seminars, 3 hours per week.*

Prerequisite: one credit from the following: GERM 1P01, 1P02, GREE 1F00, LATI 1F00, LBST 1F92, LING 1F94, PSYC 3F08, RUSS 1F00, SANS 1F00. Credit will not be granted to students who have prior credit in CLAS 397, 420 or 3P30.

#### CLAS 4F75

**Archaeological practicum**

First-hand training in archaeological field work including lectures, demonstrations and study tours of ancient sites, monuments and museums. Conducted at different times in the Mediterranean area. All practica run daily for six-weeks during the summer and are conducted with the assistance of local authorities. Recommended preparation for this course includes: CLAS 2P30, 2P93 and 4P13.

Prerequisite: permission of the department.

#### CLAS 4M00-4M09

**Study in Mediterranean lands**

(also offered as VISA 4M00-4M09)

First-hand topographical investigations of ancient sites and monuments. Study tours of the great cities and museums of the Mediterranean world with emphasis on the art and architecture of the Prehistoric, Classical and later periods. Offered in the Summer Session for approximately three- or four-weeks of intensive study abroad.

Prerequisite: permission of the department.

#### CLAS 4M95-4M99

**Advanced study and directed research**  
Individual study of one of the three areas: archaeology, ancient history or classical literature. Content to be determined by the interests of the student and the advice of the department.

*Lectures, seminars, 3 hours per week.*

## Classics

### CLAS 4P02

#### **Greek historical writing and theories of history**

Greek historical writing, its origins, development and genres: the logographers; national and local history; contemporary history; universal history; chronology; biography and eulogy; historical romance. Readings in translation from the works of Herodotos, Thucydides, Xenophon and Polybios and selections from the *Hellenica Oxyrhynchia*, fragments from other historians and historiographical documents.

*Lectures, seminar, 3 hours per week.*

Prerequisite: a CLAS credit numbered 2(alpha)90 or above or permission of the department.

Credit will not be granted to students who have prior credit in CLAS 4P01.

### CLAS 4P03

#### **Roman historical writing and theories of history**

Roman historical writing, its origins and development: annals, contemporary history; the monograph; memoirs; antiquaries; imperial biography; chronicles; ecclesiastical history. Readings in translation from the works of Sallust, Caesar, Livy, Tacitus and selected biographies and memoirs.

*Lectures, seminar, 3 hours per week.*

Prerequisite: a CLAS credit numbered 2(alpha)90 or above or permission of the department.

Credit will not be granted to students who have prior credit in CLAS 4P01.

### CLAS 4P11

#### **The art and architecture of the ancient Near East**

(also offered as VISA 4P11)

The art and architecture of Egypt, the Levant, Mesopotamia, Iran and eastern Anatolia from the Neolithic period through the Early Iron Age.

*Lectures, seminars, 3 hours per week.*

Prerequisite: a CLAS or a VISA credit numbered 2(alpha)90 or above.

Credit will not be granted to students who have prior credit in CLAS(VISA) 389hc.

### CLAS 4P13

#### **The art and archaeology of Cyprus** (also offered as VISA 4P13)

The cultural history of Cyprus from the Neolithic period through the early Byz-

antine period, based on the archaeological record and of the role of Cyprus in the civilization of the eastern Mediterranean.

*Lectures, seminar, 3 hours per week.*

Prerequisite: a CLAS credit numbered 2(alpha)90 or above or VISA 1F90 or permission of the department.

Credit will not be granted to students who have prior credit in CLAS(VISA) 398hc.

### CLAS 4P14

#### **The Aegean Bronze Age** (also offered as VISA 4P14)

The development of the Bronze Age cultures of the Aegean basin from 3000 to 1100 BC. The art and architecture of the Minoans on Crete and the Mycenaean on the Greek mainland will be stressed.

*Lectures, seminars, 3 hours per week.*

Prerequisite: a CLAS credit numbered 2(alpha)90 or above or VISA 1F90 or permission of the department.

Credit will not be granted to students who have prior credit in CLAS(VISA) 395 or 402hc.

### CLAS 4P16

#### **Archaeological analysis and interpretation**

The analysis of archaeological data to yield cultural information. The processes of inference and reconstruction in archaeological interpretation.

*Lectures, seminar, 3 hours per week.*

Prerequisites: CLAS 2P30 and 2P93 or permission of the instructor.

Credit will not be granted to students who have prior credit in CLAS 3P40.

### CLAS 4P18

#### **Science and archaeology**

Interdisciplinary examination of the roles that science and technology play in archaeological field work, analyses and interpretation.

*Lectures, seminars, 3 hours per week.*

Prerequisites: CLAS 2P93 and one other 2(alpha)00 or above half credit in the ancient art/archaeology stream.

### CLAS 4P34

#### **Biblical Hebrew**

The vocabulary, grammar and syntax of Biblical Hebrew with selected readings from the Old Testament.

*Lectures, seminar, 3 hours per week.*

Prerequisite: a credit in a language other

than English at the 1F90 level or above. Credit will not be granted to students who have prior credit in HEBR 1F00 or CLAS 4V95.

### CLAS 4P35

#### **Egyptian hieroglyphs**

The vocabulary, grammar and syntax of Ancient Egyptian with selected readings from the *Book of the Dead* and/or other ancient texts.

*Lectures, seminar, 3 hours per week.*

Prerequisite: a credit in a language other than English at the 1F90 level or above.

### CLAS 4P42

#### **Hellenistic civilization, 323-30 BC**

The political, social and intellectual history of the Hellenistic world between Alexander and Actium. The Successor states and the Hellenistic balance of power, Greek federal states, Roman intervention. Emphasis on Hellenistic science, medicine and scholarship.

*Lectures, seminar, 3 hours per week.*

Prerequisite: One credit from CLAS 2P91, 2P92, 2P98, 2P99 or permission of the department.

Credit will not be granted to students who have prior credit in CLAS 4F40.

### CLAS 4P86

#### **The end of the Ancient World and the beginning of Medieval Europe, AD 180-600**

An analysis of aspects of two of the most significant transformations in European history: the fall of the Roman Empire and the emergence of early medieval society and the victory of Christianity in Europe.

*Lectures, seminar, 3 hours per week.*

Prerequisites: GREE 1F00, LATI 1F00 and CLAS 2P98, 2P99.

Credit will not be granted to students who have prior credit in CLAS 4F85.

### CLAS 4V20-4V25

#### **Topics in archaeology**

Selected topics and problems in current archaeological research that pertain to the Mediterranean and to the Near East.

*Lectures, seminar, 3 hours per week.*

Prerequisites: CLAS 2P30, 2P93 and a CLAS credit numbered 2(alpha)90 or above.

### 1993-94: (4V22) Ancient technology

The techniques, tools and machines de-

veloped and used in the Old World from the Paleolithic period through the Byzantine era to provide food, shelter, clothing, security, transportation and communication. Emphasis will be placed on the social context of technology in the Greek and Roman worlds. Credit will not be granted to students with prior credit in CLAS 2P35.

## GREE 1F00

**Language (introductory)**

The fundamentals of Greek. Selections from various Greek authors.

*4 hours per week.*

*Note: Students who have studied Classical Greek before coming to university should identify themselves to the department; such students may be eligible to enrol in GREE 2F00.*

## GREE 2F00

**Language and literature**

Review of grammar. Graded selections from various Greek authors. Greek prose composition.

*Lectures, seminars, 4 hours per week.*

Prerequisite: GREE 1F00 or permission of the department.

Credit will not be granted to students who have prior credit in GREE 200 or 1F90.

## GREE 3V00-3V09

**Greek epic**

Selections from Greek epic (author and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: GREE 2F00.

## GREE 3V10-3V19

**Greek historians**

Selections from the works of the classical Greek historians (author and selections may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: GREE 2F00.

## 1993-94: (3V10) Herodotus'

**Histories I**

Selections from Book 2 of *The Histories*.

## GREE 3V90-3V99

**Greek tragedy**

One or more Greek tragedies and/or satyr-drama (author and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: GREE 2F00.

## 1993-94: (3V90) Euripides I

Selections from Euripides' early tragedies.

## GREE 4V00-4V09

**Attic oratory**

Speeches from the Attic orators (author and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: GREE 2F00.

## 1993-94: (4V00) Demosthenes I

Selections from the forensic speeches of Demosthenes.

## GREE 4V50-4V59

**Greek comedy**

One or more Greek comedies (author and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: GREE 2F00.

## GREE 4V60-4V69

**Greek philosophy**

Selected Greek philosophical works (authors and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: GREE 2F00.

## GREE 4V90-4V99

**Advanced readings and directed research**

Individual readings in and study of ancient Greek literature. Content to be determined by the interests of the student and the advice of the department.

*3 hours per week.*

## LATI 1F00

**Language (introductory)**

The fundamentals of Latin. Selections from various Latin authors.

*Lectures, seminars, 4 hours per week.*

*Note: Students who have studied Latin before coming to university should identify themselves to the department; such students may be eligible to enrol in LATI 2F00.*

## LATI 2F00

**Language and literature**

Review of grammar. Intermediate selections from Latin authors. Latin prose composition.

*Lectures, seminars, 4 hours per week.*

Prerequisite: LATI 1F00 or permission of the department.

Credit will not be granted to students who have prior credit in LATI 1F90 or 200.

## LATI 3V00-3V09

**Roman comedy**

Selections from Plautus and Terence (author and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 2F00.

## LATI 3V10-3V19

**Literature of the Republic: prose**

Selections from Cicero, Caesar and Cornelius Nepos (authors and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 2F00.

## 1993-94: (3V10) Cicero

Selections from the rhetorical and philosophical writings of Cicero.

## LATI 3V50-3V59

**Prose of the late Republic and Principate**

Selections from the works of Cicero, Sallust or Livy (author and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 2F00.

## LATI 3V90-3V99

**Augustan poetry**

Selections from Horace, Vergil, Tibullus, Ovid and Propertius (authors and selections may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 2F00.

## LATI 4V00-4V09

**Literature of the Republic: poetry**

Selections from Catullus and Lucretius (authors and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 2F00.

## LATI 4V10-4V19

**Historians and biographies of the Empire**

Selections from Tacitus, Suetonius and Ammianus Marcellinus (authors and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 2F00.

## Classics

LATI 4V20-4V29

### **Roman verse satire**

Selections from the satires of Horace, Juvenal and Persius (authors and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 2F00.

**1993-94: (4V20) Juvenal**

Selections from the satires of Juvenal.

LATI 4V50-4V59

### **Roman prose satire**

Selections from Petronius, Seneca and Apuleius (authors and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 2F00.

**1993-94: (4V50) Petronius and Apuleius**

The *Cena* by Petronius and selections from the *Metamorphoses* by Apuleius.

LATI 4V60-4V69

### **Literature of the Early Empire: prose and poetry**

Selections from Seneca, Lucan, Pliny the Younger, Martial and Quintilian (authors and works may vary from year-to-year).

*Lectures, seminar, 3 hours per week.*

Prerequisite: LATI 2F00.

LATI 4V90-4V99

### **Advanced readings and directed research**

Individual readings in and study of ancient Latin literature. Content to be determined by the interests of the student and the advice of the department.

*3 hours per week.*

# Communications Studies

*Director*

James C. M. Leach

*Assistant professor*

Bohdan Szuchewycz

*Associated faculty*

- Nicolas Baxter-Moore, Politics
- John G. Benjafield, Psychology
- Sharon Broderick, Management, Marketing and Human Resources
- Barry K. Grant, Film Studies, Dramatic and Visual Arts
- Deborah A. Harrison, Sociology
- William H.N. Hull, Politics
- Glenwood H. Irons, Applied Language Studies
- James C.M. Leach, Film Studies, Dramatic and Visual Arts
- John A. Lye, English Language and Literature
- Mary Jane Miller, Film Studies, Dramatic and Visual Arts
- Joan Nicks, Film Studies, Dramatic and Visual Arts
- Joan M. Preston, Psychology
- Laurel Reid, Recreation and Leisure Studies
- Jeannette Sloniowski, Film Studies, Dramatic and Visual Arts
- Walter Watson, Sociology

*Co-operating faculty from:*

English Language and Literature, Film Studies, Dramatic and Visual Arts, Management, Marketing and Human Resources, Politics, Psychology and Sociology.

**General information**

Communications Studies is an interdisciplinary program which studies human communicative behavior, the institutions of communication and the social production of meaning. It has three streams; the streams share a core of communications courses but focus on distinct areas of interest.

**The Communications: media and culture** stream is oriented toward an understanding of the role of mass media in the construction of meaning and the creation of national identity in our culture through the study of the cultural, cognitive and textual aspects of film, television, literature and popular culture.

**The Communications: social policy** stream focusses on the interaction of the mass media with social and political forces in society and includes an examination of the structures of government, the processes of public policy formation and issues of media regulation, in the Canadian context.

**The Communications: business communications** stream combines the study of communications with a study of the fundamentals of management and marketing. The stream aims to equip the student with a sound theoretical basis for analysing and practising communications within the business environment.

Students are generally advised that choice of stream is best based on their interest and aptitude. It is possible to change streams although in some cases this may require additional courses; students should consult the director.

A four-years honors BA program is offered in all three streams. Students may graduate with a pass degree upon satisfactory completion of the first three years of a program.

Communications Studies is a limited enrolment program. Both single and combined major students must apply to proceed to year 2 of the honors and pass programs. However, a 70 percent average in required courses will ensure that the student may proceed. Others will be allowed to proceed on the basis of their grade standing and available places in the streams. Acceptance into the fourth year of the honors program depends on maintenance of an average of at least 70 percent in all major credits.

Please note that the following list of program requirements is based on a normal course pattern. It may not always be possible to take all the courses in the years indicated. Students who cannot meet the requirements should consult with the program director.

**Honors program**

All Communications Studies majors must take the following courses:

*Year 1*

COMM 1F90; ENGL 1F91.

*Year 2*

COMM 2F10, 2F50, 2P20, 2P21.

*Year 3*

COMM 3F60.

*Year 4*

Two credits from COMM 3P95, 4F30, 4F80, 4F99, 4P23, 4P32, 4P50, 4P51, 4V50-59.

In addition, all Communications Studies majors must meet the requirements for one of the streams as listed below.

**Social policy stream**

*Year 1*

MGMT 1P91, 1P92; POLI 1F90; SOCI 1F90.

*Year 2*

POLI 2F12; one science context credit (BIOL 1F25 or SCIE 1F30 recommended).

*Year 3*

COMM 3P17; POLI 3F51; one-half credit from COMM 2P23, 2P55, 3P33, 3P77, 3P80, 3P94, 3P95, SOCI 3P34, 3P76; one credit from COMM 2F92, 2F97, 3F08, 3F10, 3F50, 3F97, DRAM 2F97, ENGL 2F61, 2F91; one elective credit.



## Communications Studies

### Year 4

Two credits from COMM 3P94, 3P95, 4F30, 4F80, 4F99, 4P23, 4P32, 4P50, 4P51, 4V50-4V59, SOCI 3P34, 3P76; one elective credit.

### Media and culture stream

#### Year 1

FILM 1F94; PSYC 1F90; SOCI 1F90.

#### Year 2

One credit from COMM 2F54, 2F92, 2F97, PSYC 2F20, VISA 1F90; one science context credit (BIOL 1F25 or SCIE 1F30 recommended).

#### Year 3

One credit from COMM 2F54, 2F97, 3F50; one credit from COMM 2P23, 2P55, 3P17, 3P33, 3P77, 3P80, 3P94, 3P95, DRAM 2P91, PSYC 3P82, SOCI 3P34, 3P76; one credit from COMM 2F54, 2F92, 2F97, 3F08, 3F10, 3F50, 3F91, 3F97, DRAM 2F97, ENGL 2F61, 2F91; one elective credit.

#### Year 4

Two credits from COMM 2F54, 2F92, 2F97, 3F08, 3F10, 3F50, 3F91, 3F97, 3P80, 3P94, 3P95, 4F30, 4F80, 4F99, 4P23, 4P32, 4P50, 4P51, 4V50-4V59, PSYC 3P82, 4P92; one elective credit.

### Business communications stream

#### Year 1

MGMT 1P91, 1P92, POLI 1F90; one science context elective (BIOL 1F25 or SCIE 1F30 recommended).

#### Year 2

MKTG 2P96, 2P97; one elective credit (MGMT 2P40 recommended).

#### Year 3

COMM 3P95; OBHR 3P41, 3P42; POLI 3P50, 3P65; one-half credit from COMM 2P23, 2P55, 3P17, 3P80, 3P94; one credit from COMM 2F54, 2F92, 2F97, 3F10, 3F50, 3F97; DRAM 2F97; ENGL 2F61, 2F91.

### Year 4

Two credits from MGMT, MKTG, OBHR at the year 4 level; one elective credit.

Students intending to go on to graduate school are advised to take COMM 4F99.

All honors programs must contain at least three credits numbered 3(*alpha*)90 or above.

### Pass program

Satisfactory completion of the first three years of the honors program in any stream entitles a student to apply for a pass degree.

### Combined programs

#### Honors program

Eight credits are required: COMM 1F90, 2F50, 2P20, 2P21, 3F60; one credit from COMM 2P23, 3P17, 3F95; one credit from COMM 4F30, 4P50, 4P51; two credits from COMM 3F50, 3P17, 3P94, 3P95, 4F30, 4F80, 4F99, 4P23, 4P32, 4P50, 4P51.

#### Pass program

Five credits are required: COMM 1F90, 2F50, 2P20, 2P21, 3F60; one credit from COMM 2P23, 3P17, 3P95.

### Prerequisites and restrictions

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

### Description of courses

Please note that not all courses are offered in every session. Refer to applicable term timetable for details.

#### COMM 1F90

##### Introduction to communications

Basic approaches and issues in communications from both humanities and social science perspectives. Topics will include: non-verbal communication, the cultural use of symbols and signs, qualitative and quantitative mass media analysis, critical analysis of texts, the cultural character of the Canadian media and the impact of the media and media institutions upon public attitudes and social problems.

*Lectures, seminar, 3 hours per week.*

#### COMM 1F94

##### Introduction to general linguistics (also offered as LING 1F94)

A study of phonetics, phonology, morphology, syntax and the lexicon; their evidence in language use; differences between human language and communication systems; classification of human languages; linguistic family trees. Topics and questions relevant to Indo-European and non-Indo-European languages. Note: Open to students in any year of study.

Credit will not be granted to students with prior credit in TESL 1F94.

#### COMM 2F10

##### Research methods in social relations (also offered as SOCI 2F10)

Introduction to the methods and procedures employed in social science research: research design and methods of data collection as well as the processing and analysis of data. Lectures emphasize the logic underlying research design and appropriate methods. Labs concentrate on data processing management and analysis.

*Lectures, labs, 3 hours per week.*

Prerequisite: COMM 1F90 or SOCI 1F90.

Credit will not be granted to students who have prior credit in SOCI 230, 231hc and 232hc.

COMM 2F50

**Communications theory**

Consideration of a range of theories and perspectives including semiotics, critical theory, qualitative and quantitative analysis, theories based on approaches such as system theory, constructivism and symbolic interaction, persuasion theory, mass media theories and organizational communication theory.

*Lectures, seminar, 3 hours per week.*

Prerequisite: COMM 1F90 or permission of the instructor.

Credit will not be granted to students with prior credit in COMM 2P50.

COMM 2F54

**Documentary film**

(also offered as FILM 2F54 and SOCI 2F54)

The documentary film from its beginnings in photography and the *actualités* of the Lumières through traditions and developments in documentary practice. The history, theory and aesthetics of documentary film and its cultural implications.

*Lectures, seminar, 3 hours per week; plus weekly film lab.*

Prerequisite: COMM 1F90 or FILM 1F94 or SOCI 1F90 or permission of the instructor.

COMM 2F92

**Popular narrative**

Exploration of the archetypal and mythic dimensions of works which reflect and inform the imagination of the culture and attract widespread readership. Prominent examples of popular genres such as the detective novel, Gothic fiction, speculative ('science') fiction, the western, the romance novel, the 'horror' story and the novel of international intrigue will be studied. Focus of the course will be printed texts written in English; other media may be studied in conjunction with the printed texts for purposes of comparison and clarification.

*Lectures, seminars, 3 hours per week.*

Prerequisite: one course in DRAM, ENGL or FILM or permission of the instructor.

COMM 2F97

**Canadian cinema**

(also offered as FILM 2F97)

A critical and historical study of the Canadian cinema and selected directors.

*Lectures, seminar, 3 hours per week plus weekly film lab.*

Prerequisite: COMM 2P20, 2P21(2F24) or FILM 1F94 or DRAM 2F97 or permission of the instructor.

COMM 2M90-2M99

**Special studies in communications**

Topics selected from year to year on the basis of specific areas of instructional expertise and student interest.

**1993-94: (2M90) Understanding radio**

Critical, theoretical and historical approaches to radio. A small practical project will be included.

Restriction: Consult the program director regarding permission to register.

Prerequisite: COMM 1F90 and permission of the program.

Note: Enrolment will be limited to 20.

COMM 2P20

**Introduction to popular culture**

(also offered as FILM 2P20)

Historical, theoretical and critical approaches to popular culture in various forms (e.g., film, music, literature and periodicals, advertising).

*Lectures, seminar, labs, 4 hours per week.*

Prerequisite: COMM 1F90 or FILM 1F94 or CANA 1F91 or permission of the instructor.

Credit will not be granted to students with prior credit in COMM(FILM) 2F24.

COMM 2P21

**Canadian popular culture**

(also offered as FILM 2P21)

A critical survey of the media in Canada. Studies in the popular arts, with special reference to the ways in which institutions (e.g., CBC, NFB) and selected artists identify and express a Canadian cultural imagination.

*Lectures, seminar, labs, 4 hours per week.*

Prerequisite: COMM 2P20 or permission of the instructor.

Credit will not be granted to students who have prior credit in COMM(FILM) 2F24.

COMM 2P23

**Mass media**

(also offered as SOCI 2P23)

The organization of the mass media, with special emphasis on the Canadian media and their unique difficulties. Topics may include the media's use for socialization, reproduction of the social structure and social change.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in COMM(SOCI) 248hc.

COMM 2P55

**Interpersonal communication**

(also offered as SOCI 2P55)

Perspectives on human communication including both verbal and non-verbal communication.

*Lectures, lab, 3 hours per week.*

Credit will not be granted to students who have prior credit in COMM(SOCI) 247hc.

COMM 3F08

**Psychology of language**

(also offered as PSYC 3F08)

Psychological processes involved in language including the study of meaning, language development in children, language and thought, listening, as well as special interest topics such as bilingualism and written language.

*Lectures, seminar, 3 hours per week.*

Prerequisites: Third-year standing and COMM 1F90 or PSYC 1F90 or permission of the instructor.

COMM 3F10

**Psychology of television**

(also offered as PSYC 3F10)

Psychological aspects of the visual, auditory and content dimensions of television will be examined. The applicability to television of several psychological theories, such as cognitive and information processing, perceptual and attentional theories, social learning, interpersonal communication, mass communication and developmental perspectives will be evaluated.

*Lectures, seminar, 3 hours per week.*

Prerequisites: Third-year standing and COMM 1F90 or PSYC 1F90 or permission of the instructor.

## Communications Studies

### COMM 3F50

#### **Theory and criticism of television**

(also offered as FILM 3F50)

The aesthetics of television. Historical and international perspectives and alternative practices will be considered.

*Lectures, seminar, 3 hours per week plus weekly lab.*

Prerequisite: COMM 2P20, 2P21.

### COMM 3F60

#### **Practicum in communications**

Practical application of communication theory; the study of the attributes and capacities of various communications media; effective communication; promotional and analytic writing. Includes research projects with written and oral reports.

*Lectures, seminar, 3 hours per week.*

Prerequisite: COMM 2F50 and admission to the Communications Studies program.

Credit will not be granted to students who have prior credit in COMM 3P60.

### COMM 3F97

#### **Screened women**

(also offered as FILM 3F97 and WISE 3F97)

A critical study of women's representation as aesthetic and cultural subject, from classical Hollywood cinema to contemporary women's cinema, in the context of feminist film theories and including other popular media (i.e., music, videos, television).

*Lectures, seminar, 3 hours per week, plus weekly film lab.*

Prerequisites: COMM 2P20, 2P21 or FILM 2F90 or WISE 1F90 and 2F91 or permission of the instructor.

### COMM 3P14

#### **Interpersonal communication in recreation**

(also offered as RECL 3P14)

The interpersonal qualities, abilities and insights that play an important role in facilitating a recreation experience. Special emphasis placed on self-concept, perception/values, language, non-verbal communication, listening, disclosure, relationships and resolving conflicts in the recreation setting.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to COMM (single

or combined) and RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: COMM 2F50 or permission of the instructor.

Credit will not be granted to students who have prior credit in COMM 2P55, 3P94 or SOCI 2P55.

### COMM 3P17

#### **Politics and the mass media in Canada**

(also offered as POLI 3P17)

The Canadian mass media and their relationship to the political process.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 1F90 or permission of the instructor.

### COMM 3P33

#### **Psychology of intergroup behavior**

(also offered as PSYC 3P33)

Social psychological theories and research in the area of intergroup relations and intergroup conflict. Topics include: realistic conflict theory, social identity theory, social exchange, relative deprivation, elite theory and research on intergroup perceptions and attitudes. For each topic current issues/controversies will also be examined as well as implications for the resolution of intergroup conflict.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and COMM (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisites: PSYC 1F90 and COMM 2F50 or permission of the instructor.

### COMM 3P80

#### **Psychology of interpersonal behavior**

(also offered as PSYC 3P80)

The social psychology of interpersonal attraction and relationships, as studied through experimental, correlational and longitudinal designs. Reinforcement, exchange, attributional, equity and balance models. Levels of relationships. Aspects of the maintenance and dissolution of relationships and of interpersonal psychopathology.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and COMM (single or combined) majors until date specified in

BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisites: PSYC 1F90 and COMM 2F50 or permission of the instructor.

### COMM 3P95

#### **Organizational communication**

Critical examination of the theories and practices relating to the process of communication in various organizational contexts.

*Lectures, seminar, 3 hours per week.*

Prerequisite: COMM 2F50 or OBHR 3P42.

### COMM 4F30

#### **Cultural theory**

(also offered as FILM 4F30)

Central 20th century developments in issues such as language, representation and cultural construction and their relevance to the field of communications. The emphasis and the theorists featured may vary from year-to-year.

*Seminar, 3 hours per week.*

Restriction: Open only to COMM (single or combined) and FILM (single or combined) majors with approval to year 4.

### COMM 4F80

#### **Directed reading**

Directed individual or group reading, in an area of communications studies. Students are responsible for arranging their course with a faculty member, in consultation with the program director and must submit a written proposal signed by the faculty member to the director before registration. The reading may not be on the topic or with the faculty member of the student's COMM 4F99 thesis.

Restriction: Consult the program director regarding permission to register.

### COMM 4F99

#### **Honors thesis**

A thesis to be based on individual study and research carried out under the supervision of a faculty adviser. Prior to registration in the honors year, the student must consult the director about topics and regulations and about the selection of an adviser.

Restriction: Consult the program director regarding permission to register.

COMM 4P23

**Research on popular culture**  
(also offered as SOCI 4P23)

Topics relevant to the mass media and popular culture. Students will design their own reading lists and projects and work in a largely self-directed manner. The methodological range of the projects will vary with the interests of instructor and students, but is likely to include content analysis, political economy, semiology, discourse analysis, audience receptivity and post-structuralism.

*Seminar, 3 hours per week.*

Prerequisite: COMM 1F90, 2P23 or permission of the instructor.

Restriction: Open only to COMM (single or combined) majors with approval to year 4.

Credit will not be granted to students with prior credit in COMM 4V50.

COMM 4V50-4V59

**Research in communications studies**

Theory and methodology in social science based approaches to communications studies.

*Seminar, 3 hours per week.*

Restriction: Open only to COMM (single or combined) majors with approval to year 4.

COMM 4P32

**Comparative mass media**  
(also offered as POLI 4P32)

A critical examination of selected problems concerning the mass media and the political process in Canada and other states.

*Seminars, 3 hours per week.*

Restriction: Open only to COMM (single or combined) majors with a minimum of 14.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: POLI 3F30 or permission of the instructor.

COMM 4P50

**Ethnography of communication**

Anthropological approaches to cultural variations in communications, particularly verbal communication. The purposes to which speech is put and the way it is organized for these purposes in different cultural contexts will be explored.

*Lecture, seminar, 4 hours per week.*

Restriction: Open only to COMM (single or combined) majors with approval to year 4.

Credit will not be granted to students with prior credit in COMM 4V51.

COMM 4P51

**Language and power**

The role of language in the creation and maintenance of ideology and power structures. Specific topics include: political rhetoric, religious discourse, language in the professions (e.g., law, medicine).

*Lecture, seminar, 4 hours per week.*

# Computer Science and Information Processing

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## Officers of instruction

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### Chair

Jack M. Miller

James Bradford (as of July 1, 1993)

### Associate professors

Jerzy Barchanski

James Bradford

David J.F. Hughes

David McCarthy

John Mitterer

Jonathan E. Radue

Geetha Ramanthan

Brian J. Ross

Vladimir Wojcik

### Technical assistant

David Bockus

### Network systems administrator

Jamie Wyatt

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## General information

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### *Mackenzie Chown, B305*

The Department of Computer Science and Information Processing offers courses leading to honors and pass BSc degrees in single major programs and BSc and BA honors degrees in combined major programs. The honors program consists of two streams: software systems and artificial intelligence.

### Department facilities

The University's academic computing facilities are all linked by a campus-wide fibre optic network. The department's computers form an integral part of this resource. In particular, a Micro VAX 3100 (running VMS) is available via terminals in B309. B304A houses six Silicon Graphics Indigo UNIX workstations and are served by Silicon Graphics IRIS R4000-50. The depart-

ment has three microcomputer laboratories: B315 containing 17 Macintosh LC's, B304 containing IBM PC compatibles and B309 containing 12 Macintosh computers. Students also have access to laser printing. Macintosh II computers equipped with scanners, CD-ROM, video cards and digitizers are available to senior students in H211. Other specialized equipment includes a robot arm, transputers and speech-recognition equipment.

### Options for honors program

A student in the honors computer science program must select one of the two streams prior to registration for year 3. Students should consider their desired stream when selecting elective courses in years 1 and 2.

### Students with an interest in computer hardware

In addition to the hardware-oriented COSC courses (i.e., 2F00, 3P92, 4P27) students interested in computer hardware are recommended to take PHYS 2P31 and 3P92. One of PHYS 1F20, 1F25 or 1F90 should be taken as a prerequisite for PHYS 2P31.

### Prerequisite courses

A grade of C is desirable in all prerequisites for computer science courses. A student who does not achieve a C in a prerequisite course is strongly advised to upgrade the mark in the course before proceeding.

### Non-computer science prerequisites

Some courses have prerequisites in other departments. Students are advised to plan their programs so that all prerequisites will be satisfied.

### Service courses

COSC 1P90, 1P93, 1P98 and 1P99 may not be held for major credit by students enrolled in the major or combined major programs.

### Students with high school computer science credit

Students with two high school computer science credits may be eligible for exemption from COSC 1P01 and may request in its place permission to enrol in one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06 or 2Y07. Please consult with the department chair.

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## Honors program

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### Software systems option

#### Year 1

COSC 1P01, 1P04; MATH 1P66, 1P67; one humanities context credit; one science context credit; one elective credit (see Note 1.).

#### Year 2

COSC 2F00, 2P03, one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07 (see Note 2.); MATH 1P12, 1P97; one social science context credit; one elective credit (see Note 1.).

#### Year 3

COSC 3F00, 3P01, 3P02, 3P04; one other COSC half credit (see Note 3.); MATH 3F65; one elective credit.

#### Year 4

COSC 4F90, 4P13, 4P14; one COSC credit (see Note 3.); one MATH credit (see Note 4.); one elective credit.

### Artificial intelligence option

#### Year 1

COSC 1P01, 1P04; MATH 1P66, 1P67; one humanities context credit; one science context credit; one elective credit (see Note 1.).

#### Year 2

COSC 2F00, 2P03, one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07 (see Note 2.); MATH 1P12, 1P97; one social science context credit; one elective credit (see Note 1.).

*Year 3*  
COSC 3F00, 3P02, 3P04, 3P71; one other COSC half credit (see Note 3.); MATH 3F65; one elective credit.

*Year 4*  
COSC 4F90, 4P78, 4P79; one COSC credit (see Note 3.); one MATH credit (see Note 4.); one elective credit.

*Notes:*

1. A student intending to pursue data processing should select MGMT 1P91, 1P92 (in year 1, 2 or 3).
2. COSC 2Y04 is required for a pass degree, COSC 2Y05 is required for the software systems option and COSC 2Y01 or 2Y06 is required for the artificial intelligence option.
3. For an honors degree, University regulations require six credits numbered 2(*alpha*)90 or above, including three credits numbered 3(*alpha*)90 or above.
4. To be selected from MATH 1P98, 2P20, 2P60, 4P19 or 4P20.

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**Pass program**

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*Year 1*  
COSC 1P01, 1P04; MATH 1P66, 1P67; one humanities context credit; one science context credit; one elective credit (see Note 1.).

*Year 2*  
COSC 2F00, 2P03, one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; (see Note 2.); MATH 1P12, 1P97; one social science context credit; one elective credit (see Note 1.).

*Year 3*  
COSC 3F00, 3P02, 3P04, 3P32; one other COSC half credit (see Note 5.); one MATH credit (see Note 6.); one elective credit (see Note 1.).

*Notes:*

5. For a pass degree, University regulations require three credits numbered 2(*alpha*)90 or above.

6. To be selected from MATH 1P98, 2P20, 2P60, 3F65 (recommended because it is required in the honors program), 4P19, 4P20.

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**Computer Science as a second degree**

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A student holding an honors or pass degree, other than a Brock BSc, may obtain a pass BSc in Computer Science by completing a minimum of five credits. A student holding an honors degree may obtain an honors degree in computer science by completing a minimum of ten credits. Previous or transfer credits may be used to satisfy some of the following requirements. The normal prerequisite structure must be fulfilled. Students should refer to the University regulations concerning second degrees for further information.

The additional courses taken for a second degree in Computer Science must include a minimum of three Brock COSC credits.

**Required courses:**

**Honors program**

COSC 1P01, 1P04, 2F00, 2P03; one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; COSC 3F00, 3P02, 3P04; one other COSC credit; MATH 1P66, 1P67, 1P97 either 1P12 or 1P98; three COSC credits numbered 3(*alpha*)90 or above.

**Pass program**

COSC 1P01, 1P04, 2F00, 2P03; one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; COSC 3F00, 3P02, 3P04; one other COSC credit; MATH 1P66, 1P67, 1P97, either 1P12 or 1P98.

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**Combined honors programs**

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The COSC requirements for combined honors programs with all other disciplines are outlined below. For the re-

quirements in the other discipline, consult that section of the calendar.

**BSc (honors) Computer Science and another science**

*Year 1*  
COSC 1P01, 1P04; MATH 1P66, 1P67; one MATH credit (see Note 7.); one credit in the other discipline; one social science context credit.

*Year 2*  
COSC 2F00; one additional science credit (see Note 8.); two credits in other discipline; one humanities context credit.

*Year 3*  
COSC 2P03; one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06 or 2Y07; one COSC credit; MATH 1P12; two credits in other discipline; one-half elective credit.

*Year 4*  
COSC 3F00, 3P02, 3P04; one COSC credit numbered 3(*alpha*)90 or above; two credits in other discipline numbered 3(*alpha*)90 or above.

*Notes:*

7. MATH 1P97, 1P98 for Earth Sciences, MATH 1P93, 1P94 for Physics and Chemistry.
8. MATH 2F95 for Physics, PHYS 1F20 or 1F90 for Chemistry and Earth Sciences.

**BSc (honors) Computer Science and Mathematics**

*Year 1*  
COSC 1P01, 1P04; MATH 1P66, 1P67, 1P93, 1P95; one science and one social science context credit.

*Year 2*  
COSC 2F00, 2P03; one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; MATH 1P12, 2F95, 2P60; one humanities context credit.

*Year 3*  
COSC 3F00, 3P02, 3P04; MATH 2F96, 2P20, 3F65; one-half elective credit.

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### Year 4

Two COSC credits numbered 3(*alpha*)90 or above; MATH 2F10 or 3F10; MATH 4P19, 4P20; one elective credit.

### BSc (honors) Computer Science and Physics

#### Year 1

PHYS 1F20, 1F25 or 1F90 (preferred); COSC 1P01, 1P04; MATH 1P66, 1P67, 1P93, 1P94; one social science context credit.

#### Year 2

PHYS 2P20; one and one-half credits from 2P21, 2P30, 2P31, 2P41, 2P50 (Note: PHYS 2P30, 2P41 and 2P50 are prerequisites for year 3 PHYS courses); COSC 2F00; MATH 2F95; one humanities context credit.

#### Year 3

PHYS 3P95; one and one-half credits from PHYS 3P20, 3P30, 3P41, 3P50, 3P70; COSC 2P03; one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; one COSC credit numbered 2(*alpha*)90 or above; MATH 1P12; one-half elective credit.

#### Year 4

Two credits from PHYS 4F50, 4F90, 4P41, 4P70; COSC 3F00, 3P02, 3P04; one COSC credit numbered 3(*alpha*)90 or above.

### BA (honors) or BSc (honors) Computer Science and a humanities or a social science

#### Year 1

COSC 1P01, 1P04; MATH 1P66, 1P67; one credit in other discipline; one science and one social science context credit (see Note 9.).

#### Year 2

COSC 2F00, 2P03; one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; two credits in other discipline; one humanities context credit.

#### Year 3

COSC 3P02, 3P04; one other COSC credit; MATH 1P97, 1P98; two credits in other discipline.

### Year 4

COSC 3F00; one other COSC credit numbered 3(*alpha*)90 or above; two credits in other discipline numbered 3(*alpha*)90 or above; one elective credit.

#### Note:

9. One context credit and one elective credit if the required course in the other discipline is a social science context credit.

### BA (honors) or BSc (honors) Computer Science and Economics

#### Year 1

ECON 1P91, 1P92; COSC 1P01, 1P04; MATH 1P66, 1P67, 1P97, 1P98; one science context credit.

#### Year 2

ECON 2P21, 2P22, 2P31, 2P32; COSC 2F00, 2P03; one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; one humanities context credit.

#### Year 3

ECON 2P90; one and one-half ECON credits at the 2(*alpha*)90 level or above; COSC 3P02, 3P04; one COSC credit; one elective credit.

#### Year 4

ECON 3P90, 3P91, 4P13, 4P14; COSC 3F00; one COSC credit numbered 3(*alpha*)90 or above; one elective credit.

### BA (honors) Computer Science and Geography (see Note 10.).

#### Year 1

COSC 1P01, 1P04; GEOG 1F90; MATH 1P66, 1P67; one science and one humanities context credit.

#### Year 2

COSC 2F00, 2P03, one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; GEOG 2P07, 2P10; one credit from GEOG 2P02, 2P03, 2P06; MATH 1P97, 1P98.

#### Year 3

COSC 3F00, 3P02, 3P04; GEOG 3P57; one and one-half year 3 credits in GEOG from group A and C (see Geography department); one elective credit.

### Year 4

One credit at the 3(*alpha*)90 level or above in COSC; one other credit in COSC; GEOG 4F99; one other year 4 credit in GEOG from group A and C (see Geography department); one elective credit.

#### Note:

10. For students with a special interest in geographical information systems the following courses are strongly recommended as GEOG and COSC elective credits: GEOG 3P04, 3P05, 3P07; COSC 3P32, 3P78.

### BSc (honors) Computer Science and Geography (see Note 10).

#### Year 1

COSC 1P01, 1P04; GEOG 1F91; MATH 1P66, 1P67; one social science and one humanities context credit.

#### Year 2

COSC 2F00, 2P03, one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; GEOG 2P07, 2P11; one credit from GEOG 2P04, 2P05, 2P09; MATH 1P97, 1P98.

#### Year 3

COSC 3F00, 3P02, 3P04; GEOG 3P56; one and one-half year 3 credits in GEOG from group B and C (see Geography department); one elective credit.

#### Year 4

One credit at the 3(*alpha*)90 level or above in COSC; one other credit in COSC; GEOG 4F99; one year 4 credit in GEOG from group B and C (see Geography department); one elective credit.

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### Prerequisite and restriction

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

Most courses involve hands-on programming experience.

COSC 1P01

**Computer programming**

An introduction to computers and programming. Topics include: computer organization, algorithms, problem solving and structured programming in a high-level language (currently MODULA-2).

*Lectures, 3 hours per week, lab, 2 hours per week, tutorial, 1 hour per week.*

Credit will not be granted to students with credit in COSC 103hc or COSC 195hc.

COSC 1P04

**Programming methodology and data structures**

An introduction to software engineering and intermediate-level data structures. Topics include: top-down design, modular decomposition, abstraction, information hiding, program testing and debugging; strings, files, stacks, queues, lists; advanced programming language features. (Knowledge of MODULA-2 is assumed.)

*Lectures, 3 hours per week, lab, 2 hours per week, tutorial, 1 hour per week.*

Prerequisite: COSC 1P01 or one-half credit chosen from COSC 2Y01, 2Y04, 2Y05, 2Y06 or 2Y07.

Credit will not be granted to students with credit in COSC 230hc.

COSC 1P90

**Computer applications**

An introduction to computers and the use of microcomputers in academia and industry. Various computer packages (word processing, presentation and spreadsheet) are presented, giving the student hands-on experience. Primary instruction is on the Macintosh computer, PCs will be introduced.

*Lectures, seminar, lab, 4 hours per week.*

Restriction: Not open to COSC (single or combined) majors.

Note: May not normally be taken concurrently with or after receiving credit for any other COSC course.

COSC 1P93

**Introduction to computing for physical and natural sciences**

Modern software techniques: problem solving and design of effective algorithms; structured program design methodology; subprogram library usage; documentation; correctness; floating-point arithmetic; error analysis. Programming assignments are implemented in a high-level language (currently FORTRAN 77).

*Lectures, 3 hours per week, lab, 2 hours per week, tutorial 1 hour per week.*

Restriction: Not open to COSC (single or combined) majors.

Prerequisite: OAC mathematics credit.

Note: May not normally be taken concurrently with or after receiving credit for COSC 1P01.

COSC 1P98

**Intermediate computer applications**

The use of major computer applications across a variety of platforms. Computer packages: advanced word processing, advanced spreadsheet, database, statistical analysis, electronic mail and communications. Laboratories provide both Macintosh and PC (MS-DOS) experience. UNIX systems are introduced.

*Lectures, seminar, lab, 5 hours per week.*

Restriction: Not open to COSC (single or combined) majors.

Prerequisite: Previous computer experience (e.g., high school computer science, COSC 1P90, MGMT 1P95 or extensive experience with microcomputers).

Note: May not normally be taken concurrently with or after receiving credit for any other COSC course with the exception of COSC 1P90.

COSC 1P99

**Introduction to enterprise computing**

The use and management of microcomputer and work station networks in an enterprise. Topics: enterprise computing using networked micro, mini and mainframe computers; hardware and software evaluation and acquisition; security and ethics (e.g., privacy, piracy and viruses); networking and communications (e.g., LANs, WANs, frontending); and net-

work management (e.g., backups and upgrading).

*Lectures, seminar, lab, 5 hours per week.*  
Restriction: Not open to COSC (single or combined) majors.

Prerequisite: COSC 1P93 or 1P98.

COSC 2F00

**Computer systems**

An introduction to computer architecture and assembly language programming, emphasizing a specific machine architecture (currently the VAX computer). Topics include: assembly language programming, macros, elementary logic circuits, basic computer architecture.

*Lectures, 3 hours per week, lab, 2 hours per week.*

Prerequisites: COSC 1P04 and MATH 1P66, 1P67.

Credit will not be granted to students with credit in COSC 2P02 and/or 2P12.

COSC 2P03

**Advanced data structures**

Advanced data structures and an introduction to file structures; the implementation and usage of data structures. Topics include: trees, graphs, advanced list structures, introduction to file organizations and database structures. (Knowledge of MODULA-2 is assumed.)

*Lectures, 3 hours per week, lab, 2 hours per week*

Prerequisites: COSC 1P04 and MATH 1P66, 1P67.

COSC 2Y01

**Programming languages: PROLOG**

An advanced introduction to the PROLOG programming language: syntax, semantics, control, I/O, applications.

*Lecture, 1 1/2 hours per week, lab, 2 hours per week.*

Prerequisite: COSC 1P04 or permission of department chair.

Note: A student may not hold major credit for more than two of COSC 2Y01, 2Y04, 2Y05, 2Y06 and 2Y07.

Credit will not be granted to students with credit in COSC 2P07, 3P77 or 4P17.

COSC 2Y04

**Programming languages: COBOL**

An advanced introduction to the COBOL programming language: syntax, semantics, control, I/O, applications.

*Lectures, 1 1/2 hours per week, lab, 2 hours per week.*



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Prerequisite: COSC 1P04 or permission of department chair.

Note: A student may not hold major credit for more than two of COSC 2Y01, 2Y04, 2Y05, 2Y06 and 2Y07.

Credit will not be granted to students with credit in COSC 2P04, 2P07, 3P77 or 4P17.

### COSC 2Y05

#### Programming languages: C

An advanced introduction to the C programming language: syntax, semantics, control, I/O, applications.

*Lectures, 1 1/2 hours per week, lab, 2 hours per week.*

Prerequisite: COSC 1P04 or permission of department chair.

Note: A student may not hold major credit for more than two of COSC 2Y01, 2Y04, 2Y05, 2Y06 and 2Y07.

Credit will not be granted to students with credit in COSC 2P07, 3P77 or 4P17.

### COSC 2Y06

#### Programming languages: LISP

An advanced introduction to the LISP programming language: syntax, semantics, control, I/O, applications.

*Lectures, 1 1/2 hours per week, lab, 2 hours per week.*

Prerequisite: COSC 1P04 or permission of department chair.

Note: A student may not hold major credit for more than two of COSC 2Y01, 2Y04, 2Y05, 2Y06 and 2Y07.

Credit will not be granted to students with credit in COSC 2P07, 3P77 or 4P17.

### COSC 2Y07

#### Programming languages

An advanced introduction to an additional programming language; syntax, semantics, control, I/O application. Actual language to be specified each year; consult the department.

*Lectures, 2 hours per week, lab, 2 hours per week.*

Prerequisite: COSC 1P04 or permission of department chair.

Note: A student may not hold major credit for more than two of COSC 2Y01, 2Y04, 2Y05, 2Y06 and 2Y07.

Credit will not be granted to students with credit in COSC 2P07, 3P77 or 4P17.

### COSC 3F00

#### Project organization and management

Introduction to scientific principles and managerial skills required for the construction of reliable software: Attributes of large complex software systems and software process models for managing the phases of software development; software requirements analysis, tools and software requirements document writing; software specification methods, software design concepts and alternate methodologies such as prototyping and object-oriented paradigms; several software testing, verification and validation methods. Theory taught in class will be reinforced with practice in laboratory sessions. Students are expected to complete a major group project.

*Lectures, 3 hours per week.*

Prerequisites: COSC 2P03, one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06 or 2Y07.

### COSC 3P01

#### Data communications

An introduction to data communications with emphasis on computer communications networks. Topics include: basic concepts of data communications, transmission media, multiplexing and switching techniques, error recovery, network architecture and topology, communications protocols, local area networks and public data networks.

*Lectures, 3 hours per week.*

Prerequisites: COSC 2F00, MATH 1P66, 1P67.

Credit will not be granted to students with credit in COSC 314hc.

### COSC 3P02

#### Principles of operating systems

An introduction to computer operating systems from a user's viewpoint. Emphasis is on the functionality of operating systems rather than their implementation. Topics include: file, processor, I/O and memory management; concurrent processes.

*Lectures, 3 hours per week.*

Prerequisite: COSC 2F00.

Credit will not be granted to students with credit in COSC 312hc.

### COSC 3P04

#### Introduction to user interfaces

Introduction to the study of the design of human/computer interfaces. Topics include: human factors (design and support of systems for human use), command languages, grammars, menu and window systems, user documentation and on-line help systems.

*Lectures, 3 hours per week.*

Prerequisite: COSC 2P03.

Credit will not be granted to students with credit in COSC 4V97.

### COSC 3P13

#### Principles of programming languages

The fundamental concepts of high-level programming languages are discussed with references to both traditional and modern languages. The various programming language paradigms (i.e., imperative, applicative, object-oriented) will be discussed.

*Lectures, 3 hours per week.*

Prerequisites: COSC 2F00, one half-credit from COSC 2Y01, 2Y04, 2Y05, 2Y06 or 2Y07.

Credit will not be granted to students with credit in COSC 295hc or COSC 303hc.

### COSC 3P15

#### Object-orientation

An introduction to object-oriented computing including fundamental concepts of object-orientation, object-oriented languages and object-oriented programming, object-orientation in databases and user interfaces. Programming in one or more object-oriented languages will be included.

*Lecture, 3 hours per week.*

Prerequisites: COSC 2P03 and preferably COSC 2Y05.

### COSC 3P32

#### Database management

Fundamental database concepts: specification and design of databases and applications; the relational model and processing with SQL; microcomputer databases; the CODASYL DBTG model; database administration; fundamentals of distributed databases. (Knowledge of C or COBOL assumed.)

*Lectures, 3 hours per week.*

Prerequisite: COSC 2P03.

Credit will not be granted to students with credit in COSC 342hc.

**COSC 3P71**

**Artificial intelligence**

An introduction to the study of artificial intelligence. Topics include: heuristic programming, analysis of solution space, searching, pattern recognition, artificial learning, decision making and problem solving. Problem areas discussed include: game playing, text recognition, natural language translation and question answering.

*Lectures, 3 hours per week.*

Prerequisite: COSC 2P03.

Credit will not be granted to students with credit in COSC 4P71(470 or 472hc).

**COSC 3P75**

**Introduction to human factors**

(also offered as PSYC 3P75)

The effect of machines on individuals and groups. Key questions include: How does the design of a machine affect the quality of life of the machine user? How does automation affect group interaction? The physical, mental and sensory characteristics of human beings with an emphasis on how these characteristics should influence the design of machines and systems. Does not involve any computer programming.

*Lectures, 3 hours per week.*

Restriction: Students must have a minimum of 10.0 overall credits.

**COSC 3P78**

**Interactive computer graphics**

Line and raster graphics, display processors, display files, graphical transformations, graphics hardware, interactive techniques, graphics languages, introduction to curved surfaces and the hidden line problem. (Knowledge of C and PASCAL assumed.)

*Lectures, 3 hours per week, lab, 2 hours per week.*

Prerequisite: COSC 2P03.

Credit will not be granted to students with credit in COSC 376hc or 380hc.

**COSC 3P91**

**Computer system management**

An introduction to management of a computer installation; a discussion of the physical installation of a computer: layout, site preparation, environmental con-

trol, fire protection, insurance and security of the installation. Other topics include: usage accounting, system balancing and tuning, staffing, contracts and the implications of federal and provincial regulations.

*Lectures, 3 hours per week.*

Prerequisite: COSC 3P02.

Credit will not be granted to students with credit in COSC 4P31.

**COSC 3P92**

**Computer architecture**

Variations in computer architectures including: different data types and operations, instruction sets, addressing spaces, store structures and I/O facilities of various machines. Autonomous processors and specialized computers.

*Lectures, 3 hours per week, lab, 3 hours per week for 6 weeks.*

Prerequisite: COSC 2F00.

Credit will not be granted to students with credit in COSC 3P21 or 392hc.

**COSC 3P93**

**Introduction to parallel computing**

Introduction: origins of parallelism, classification of designs, characterization of performance. Pipelined computers: selection and comparison, case studies. Processor arrays: switching networks, case studies. Parallel languages: general principles, parallel constructs, vectorizing compilers, issues of portability. Practical exposure to OCCAM and transputer networks. Parallel algorithms: general principles, recurrences, parallel approach to data structures and computational structures. Future trends: technology, design limitations, future supercomputers.

*Lectures, 3 hours per week.*

Prerequisite: COSC 3P02.

**COSC 3V90-3V99**

**Computing topics I**

Selected topics in computer science and information processing.

Prerequisite: permission of the chair.

**COSC 4F70**

**Introduction to cognitive science**  
(also offered as PHIL 4F70)

An overview of the modern study of the mind from a computational, psychological and philosophical perspective. Computer models of human information

processing are examined in three ways: as a branch of computer science related to artificial intelligence, as psychological theories of human functioning and as a source of philosophical puzzles about minds. The interdisciplinary nature of cognitive science is stressed.

*Lectures, 3 hours per week, lab, 1 hour per week.*

Restriction: Consult the department regarding permission to register.

Prerequisite: permission of the instructor.

Note: a previous knowledge of computer programming is not necessary for registration in the course.

**COSC 4F90**

**Computing project**

A full-year project course under the supervision of a faculty member from the department. Prospective students should contact the project co-ordinator, prior to registration, for further details of requirements and available projects.

Prerequisite: COSC 3F00.

Credit will not be granted to students with credit in COSC 4P07.

**COSC 4P13**

**Operating systems: design and implementation**

The design and implementation of operating systems including user interface, process management, I/O device control, memory management and file systems. The practical component will involve the extension and/or modification of an existing operating system. (Knowledge of C assumed.)

*Lectures, 3 hours per week.*

Prerequisites: COSC 2F00, 3P02.

Credit will not be granted to students with credit in COSC 412hc.

**COSC 4P14**

**Computer networks**

The principles of computer network design and implementation with the OSI reference model as framework. Topics include: functional layers of the OSI model, subnetwork design for local and wide-area communication, methods and protocols for provision of network services.

*Lectures, 3 hours per week.*

Prerequisites: COSC 3P01, 3P02, MATH 3F65.

## Computer Science and Information Processing

### COSC 4P22

#### Real-time computing systems

Computer systems used to observe and control a physical process or object, typically sensor or clock driven. A structured approach to real-time systems development based on a rigorous model for system behavior. Implementation using appropriate hardware and software.

*Lectures, 3 hours per week.*

Prerequisite: COSC 3P02.

### COSC 4P27

#### Microprocessor systems

Historical development of microprocessors; microprocessors and their operations, system support components, microprocessor systems, low-level programming, software support, interfacing to the real world, systems development, advanced microprocessors.

*Lectures, 3 hours per week, lab, 2 hours alternate weeks.*

Prerequisite: COSC 2F00.

Credit will not be granted to students with credit in COSC 322hc or COSC 394hc.

### COSC 4P32

#### Programming personal computers

An investigation of a modern microcomputer system, primarily from the perspective of the operating system; programming to interact with the operating system. Topics include: memory management, file management, windows, menus, events and graphics. (Knowledge of C and PASCAL assumed.)

*Lectures, 3 hours per week.*

Prerequisites: COSC 3P02.

### COSC 4P75

#### Compiler construction

An introduction to the study of compilers. Topics include: lexical, syntactic and semantic analysis of high-level languages; symbol table organization; code generation and optimization.

*Lectures, 3 hours per week.*

Prerequisites: COSC 2F00 and 2P03.

Credit will not be granted to students with credit in COSC 395hc.

### COSC 4P77

#### Discrete event simulation

(also offered as MATH 3P57)

Classification of simulation problems; discrete, continuous, Monte Carlo, general discrete modeling concepts, discrete

system models; basic analysis techniques: sampling, estimation, inductive inference, random number generators, queuing theory, time series analysis; simulation experiments: variance reduction techniques, optimization procedures, sample size and stopping rules; modeling techniques for system inputs; verification and validation procedures; a critique of the simulation approach.

*Lectures, 3 hours per week.*

Prerequisites: COSC 1P04, MATH 1P97, 1P98, 3F65.

### COSC 4P78

#### Robotics

Computer control aspects of robots with special emphasis on some applicable artificial intelligence techniques; topics include robot sensors, end effectors, actuators, vision and tactile sensing, voice synthesis and recognition, expert systems and robot programming.

*Lectures, 3 hours per week, lab, 1 hour per week.*

Prerequisites: COSC 2F00, 3P71, MATH 3F65.

### COSC 4P79

#### Expert systems

Development of expert systems. Topics include: recognition of problems solvable by an expert system; knowledge engineering; languages for expert systems development. Students will experiment with expert system development using an expert system shell and expert system building tool. (Knowledge of LISP and PROLOG assumed.)

*Lectures, 3 hours per week, lab, 2 hours per week.*

Prerequisites: COSC 2P03 and 3P71.

### COSC 4V90-4V99

#### Computing topics II

Selected topics in computer science and information processing.

Prerequisite: permission of the chair.

# Earth Sciences

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## Officers of instruction

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### Chair

Richard J. Cheel

### Undergraduate program adviser

Gregory C. Finn

### Professors

Uwe Brand

Simon J. Haynes

Wayne T. Jolly

John Menzies

### Associate professors

Richard J. Cheel

Jean-Jacques Flint

Stephen Westrop

### Assistant professors

Gregory C. Finn

Frank Fueten

Francine McCarthy

### Senior instructor

E. Brian Grant

### Adjunct professor

Kent Novakowski

### Professor emeritus

Jaan Terasmae

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## General information

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### *Mackenzie Chown, D411*

The Department of Earth Sciences offers a BSc designed to provide students with a broad background leading to specialization for career opportunities in earth sciences or for admission to advanced degree studies. Combined programs with other departments are also available. The field of earth science is central in solving current problems such as waste disposal, pollution, groundwater management, volcanic and earthquake hazards. It is also vital in the exploration and utiliza-

tion of natural resources such as oil and gas, minerals and aggregates.

To achieve this objective the undergraduate program consists of a set of core courses in year 1, year 2 and part of year 3. Students progressively move into more advanced studies culminating in independent research in year 4, where they can specialize in a curriculum reflecting their personal interests. Most courses include local field trips during laboratory periods. These trips allow students to gain first-hand field experience.

Students considering concentrations in quaternary geology, environmental geology, paleoecology, sedimentology, hydrology, or groundwater are advised to select from the following courses as part of the year 2, 3 and 4 electives: ERSC 2P64, 3P24, 3P25, 3P43, 3P61, 4P10, 4P28, 4P41, 4P42, and 4P61.

Those wishing to pursue a career in petrology, economic geology, volcanology, structure or tectonics are advised to select from the following courses as electives: ERSC 3P94, 3P98, 4P01, 4P22, 4P26, 4P52.

Specializations are also available in carbonate geochemistry, petroleum geology, Precambrian geology, paleontology or stratigraphy. Those interested should consult the department for suggested course programs in these disciplines.

Students in disciplines other than science, may take ERSC 2P61, 2P64 and 2P99 as general electives.

The department has teaching and research laboratories in the above mentioned fields, including facilities such as radiocarbon dating, X-ray diffraction and fluorescence, cathode luminescence microscopic analysis, atomic absorption spectrometry, halogen analysis, image analysis, digitizer, fluorometric analysis and stable isotope preparation. These are supported by rock specimen preparation and drafting facilities, dark rooms and cold rooms. The department shares the facilities of electronic, woodworking and glass blowing shops with other departments. In addition to departmental

minicomputers, the department has access to the University and Library computers through remote terminals.

**Students should plan their programs accordingly and are required to have their program plans approved by the departmental undergraduate adviser. (1993-94: Gregory C. Finn, MC D429)**

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## Honors program

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### Year 1

ERSC 1F95; MATH 1P98; one-half credit from MATH 1P12, 1P93, 1P97; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; one humanities or one social science context credit; one science credit (see Note 1.).

### Year 2

ERSC 2P01, 2P21, 2P22, 2P31, 2P32, 2P61; one science credit at year 2 level; the humanities or social science context credit not taken in year 1. (see Note 1.)

### Year 3

ERSC 3P21, 3P31, 3P71; two and one-half credits from remaining year 3 ERSC courses; one elective credit.

ERSC 3P99, normally taken at the end of year 3, is required for admission to year 4.

### Year 4

ERSC 4F90; three credits from year 4 ERSC or from the remaining elective ERSC credits offered in year 3; one elective credit.

### Note:

1. The unspecified science elective credit is to be taken from MATH, BIOL, CHEM, PHYS or COSC (except MATH 1F92, 1P60, BIOL 1F25, SCIE 1F20, 1F30 or ASTR 1F00).

## Earth Sciences

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### Pass program

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Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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### Concurrent BSc/BEd

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The Faculty of Mathematics and Science and the Faculty of Education co-operate in offering a concurrent BSc/BEd program for students interested in teaching math or science at the junior/intermediate level; grades 4 - 10. Please refer to the Education-Concurrent BSc/BEd Program listing for additional information.

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### Combined major programs

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The Department of Earth Sciences, in cooperation with other departments, offers combined major programs in Earth Science with Biology, Chemistry, Geography, Physics, and Urban and Environmental Studies. Prospective students should have their programs approved by the two departments concerned and are advised to follow one of the following patterns:

#### Earth Science and Biology

##### Honors program

###### Year 1

BIOL 1F90; ERSC 1F95; MATH 1P97, 1P98; CHEM 1P80, 1P81 or CHEM 1P90, 1P91 or PHYS 1F20; one humanities or social science context credit.

###### Year 2

Two credits from BIOL 2F01, 2P04, 2P05, 2P90, 2P91, 2P93, 2P98; ERSC 2P31, 2P32; one credit from year 2 ERSC; the context credit not taken in year 1.

###### Year 3

Two year 3 BIOL credits; two year 2 or 3 level ERSC credits; one elective credit in BIOL or ERSC.

###### Year 4

One and one-half credits in BIOL at year 3 or year 4 level; one and one-half credits in ERSC at year 3 or year 4 level; either BIOL 4F90, 4F91, or 4F92 plus one elective credit, or ERSC 4F90 plus one elective credit.

###### Note:

ERSC 3P99 or BIOL 3P71 is required for entry to year 4.

##### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

#### Earth Science and Chemistry

##### Honors program

###### Year 1

CHEM 1P80, 1P81 or CHEM 1P90, 1P91; PHYS 1F90; ERSC 1F95; MATH 1P93, 1P94; one humanities or social science context credit.

###### Year 2

CHEM 2P03; one credit from CHEM 2P12, 2P20, 2P32, 2P42; ERSC 2P21, 2P22; one year 2 ERSC credit; the context credit not taken in year 1; one-half elective credit.

###### Year 3

One credit from CHEM 2P12, 2P20, 2P32, 2P42 not taken in year 2; CHEM 3P40; one-half credit from CHEM 3P20, 3P21, 3P30, 3P31, 3P51, 3P53 or 3P60; ERSC 3P31; one and one-half credits in ERSC at year 2 or 3 level; one elective credit in CHEM or ERSC.

###### Year 4

One credit in CHEM at year 3 or 4 level; one credit in ERSC at year 3 or 4 level; either CHEM 4F90 and 4F91 or ERSC 4F90 and one credit in ERSC at year 3 or 4 level; one elective credit.

###### Note:

ERSC 3P99 is normally required at the end of year 3.

##### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

## Earth Science and Geography

### Honors program

#### Year 1

ERSC 1F95; GEOG 1F91; MATH 1P97, 1P98; one social science context credit (GEOG 1F90 strongly recommended); one humanities context credit.

#### Year 2

ERSC 2P01, 2P21, 2P61, 2P64; GEOG 2P11; one and one-half credits from GEOG 2P04, 2P05, 2P07, 2P09; one elective credit.

#### Year 3

ERSC 2P31; one and one-half credits in ERSC at year 2 or year 3 level; GEOG 3P56; one and one-half year 3 credits in GEOG from group B and C (see Geography department); one science credit from BIOL, CHEM, COSC, MATH or PHYS.

#### Year 4

Two credits in ERSC at year 3 or year 4 level; GEOG 4F99; one year 4 credit in GEOG from group B; one elective credit. The courses selected must include either ERSC 4F90 or GEOG 4F90 and at least three credits at the year 4 level.

##### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

#### Earth Science and Physics

##### Honors program

###### Year 1

ERSC 1F95; MATH 1P93, 1P94; PHYS 1F20 or 1F90 (preferred); one humanities and one social science context credit.

###### Year 2

ERSC 2P01; one and one-half credits in ERSC at year 2 level; MATH 2F95; two credits in PHYS at year 2 level.

###### Year 3

Two credits from ERSC at year 2 or 3 level; one year 2 PHYS credit; one year 3 PHYS credit; one elective credit in ERSC or PHYS.

**Year 4**

ERSC 4F90 or PHYS 4F90; one year 3 or 4 level ERSC credit; one year 3 PHYS credit or one credit from PHYS 3P20, 4P41, 4P70, 4P71; one year 3 or 4 ERSC or PHYS credit; one elective credit.

**Note:**

ERSC 3P99 is normally required at the end of year 3.

**Pass program**

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Master of Science (MSc) program**

Candidates with either an honors or pass BSc degree in Earth Sciences may apply for entry into this program.

Candidates holding a pass degree will be required to take a qualifying year similar to year 4 of the honors program before formally enrolling for the MSc degree. Candidates are encouraged to write the Graduate Record Examination in geology.

Candidates with an honors degree, or who have completed a qualifying year, require a minimum of one year.

The following are possible foci of this program: quaternary geology, sedimentology, surface hydrology, geomorphology, geochemistry, limnogeology, sedimentary processes, fluvial geology, palynology, geochronology, paleoecology, volcanology, structural geology, ore genesis and tectonics.

The graduate offerings in any given year will be selected from:

ERSC 5F90  
MSc thesis

ERSC 5P30  
Structural geology

ERSC 5P31  
Tectonics

ERSC 5P35  
Quaternary palynology

ERSC 5P40  
Quaternary geochronology

ERSC 5P41  
Glaciology

ERSC 5P45  
Advanced paleoecology

ERSC 5P46  
Evolutionary paleobiology

ERSC 5P50  
Sedimentary environments

ERSC 5P55  
Volcanology

ERSC 5P56  
Ore genesis

ERSC 5P58  
Chemical sedimentology

ERSC 5P59  
Carbonate geochemistry

ERSC 5P61  
Quantitative methods in geology

ERSC 5P70  
Fluvial geology

ERSC 5P71  
Advanced paleolimnology

ERSC 5P75  
Limnogeology

ERSC 5P76  
Industrial minerals

ERSC 5P85  
Pleistocene geology

ERSC 5V90-5V99  
Selected topics in contemporary geology

For details, see graduate calendar or consult the chair of the department.

**Prerequisite and restrictions**

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

**Description of courses**

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

**ERSC 1F90****Geology and the environment**

A course intended primarily for the non-science major. The relationships between geologic processes, the environment and evolution. Topics include: origin of the planet earth, development of the atmosphere, oceans and continents, origin of life, volcanic activity, earthquake prediction, shoreline erosion, disposal of toxic and nuclear wastes and human evolution. Students demonstrating exceptional performance in ERSC 1F90 may, at the discretion of the department, register in year 2 courses.

*Lectures, 2 hours; labs or local field trips, 2 hours per week.*

Note: High school sciences not a prerequisite.

Credit will not be granted to students who have prior credit in GEOL 1F90.

**ERSC 1F95****Introduction to earth science**

The chemical and physical nature of the earth as a member of the solar system; the particular chemical and physical properties of the features of the earth and originating processes; the fossil record and the history of life; environmental geology, impact of anthropogenic contaminants on lithosphere and hydrosphere. *Lectures, lab and local field trips, 5 hours per week.*

Prerequisite: any two of biology, chemistry, environmental science, geology, mathematics or physics beyond grade 11 or equivalent.

## Earth Sciences

Credit will not be granted to students who have prior credit in GEOL 1F95.

### ERSC 2P01

#### **Structural geology**

The measurement and effects of stress and strain. Genesis of brittle and ductile structural features and their classification. Methods of structural analysis and examination of hand specimens.

*Lectures, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 1F95.

Credit will not be granted to students who have prior credit in GEOL 2P01.

### ERSC 2P21

#### **Mineralogy**

Crystal systems, symmetry operations, introduction to the 32 crystal classes; X-ray diffraction; mineral composition and structure; physics and chemistry of minerals; mineral identification.

*Lectures, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 1F95.

Credit will not be granted to students who have prior credit in GEOL 2P21.

### ERSC 2P22

#### **Optical mineralogy**

Internal structure of crystals. The petrographic microscope and its usefulness in the identification of and familiarization with, major rock forming minerals, as discrete grains and in thin section.

*Lectures, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 2P21.

Credit will not be granted to students who have prior credit in GEOL 2P22.

### ERSC 2P31

#### **Clastic sedimentology**

A first course in clastic sedimentology which emphasizes the description and elementary interpretation of sedimentary materials. Topics include: the textural characteristics of sediment, porosity and permeability of granular materials, classification of sedimentary rocks, fluid flow and sediment transport, bedforms and stratification. Laboratories will illustrate common techniques employed in the study of sediments and sedimentary rocks.

*Lectures, lab and local field trips, 5 hours per week.*

Prerequisite: ERSC(GEOL) 1F95.

Credit will not be granted to students who have prior credit in GEOL 2P31.

### ERSC 2P32

#### **Paleontology**

Fossil preservation and bias in the fossil record; ontogeny and growth of invertebrates; functional morphology of selected invertebrate groups; an introduction to population ecology; speciation; paleoecology; mass extinctions in the fossil record. Labs deal with the classification and morphology of the major invertebrate groups. Principles of taxonomy will also be discussed and will involve a lab project.

*Lectures, lab and local field trips, 5 hours per week.*

Prerequisite: ERSC(GEOL) 1F95, BIOL 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in GEOL 2P32.

### ERSC 2P61

#### **Environmental geology**

Philosophy and principles of environmental geology. Natural geologic processes and hazards: flooding, landslides, earthquakes, volcanic activity, glacial and coastal phenomena. Hydrogeology and human activity: supply, water use, solid waste and hazardous waste disposal. Mineral and energy resource utilization and possible consequent pollution.

*Lecture, seminar, lab, 4 hours per week.*

Prerequisite: ERSC(GEOL) 1F90 or 1F95.

Credit will not be granted to students who have prior credit in GEOL 2P61.

### ERSC 2P64

#### **Urban geology**

The interaction of urban activity with geology. How applied Quaternary geology, engineering geology and economic geology affect modern habitation and living (large subdivisions, plazas, sewage disposal, reservoirs), energy plants, transportation routes (road, rail and water), construction materials and industrial mineral resources and disposal dumps. Implications for business and society. The Niagara Peninsula as a natural field laboratory.

*Lectures, seminar, field trip, 5 hours per week.*

Prerequisite: ERSC(GEOL) 1F90 or 1F95.

Credit will not be granted to students who have prior credit in GEOL 2P64.

### ERSC 2P99

#### **Dinosaurs and the history of life**

An introductory course to paleontology, with emphasis on the evolutionary history of the vertebrates. Topics covered include: vertebrate origins; evolutionary history of fish; fossil amphibians; marine reptiles of the Mesozoic Era; dinosaurs and other archosaurs; origin of birds; origin and evolution of the mammals; human evolution; evolutionary history of land plants.

*Lectures, 3 hours per week.*

Prerequisite: Any one of ERSC(GEOL) 1F90, 1F95, BIOL 1F25, 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in GEOL 2P99.

### ERSC 3P21

#### **Petrography and petrology**

Igneous, metamorphic and sedimentary rocks in thin section; their composition, texture, structures, origin and classification.

*Lectures, lab, 5 hours per week.*

Prerequisites: ERSC(GEOL) 2P22 and CHEM 1P80, 1P81 or CHEM 1P90, 1P91.

Credit will not be granted to students who have prior credit in GEOL 3P21.

### ERSC 3P24

#### **Glacial geomorphology/geology** (also offered as GEOG 3P24)

Introduction to glaciology; glacial processes, glacial deposits: their genesis and sedimentology. Relationship of glacial processes to landforms and surface topography. Glacial systems and facies associations. Applied aspects of glacial geology, e.g., drift exploration.

*Lectures, lab, field work, 5 hours per week.*

Prerequisite: ERSC(GEOL) 2P31 (for students in the Earth Sciences program). Credit will not be granted to students who have prior credit in GEOL 3P24.

### ERSC 3P25

#### **Pleistocene geology**

(also offered as GEOG 3P25)

Glaciations in the geological record; causes of glaciations; biotic responses to climatic changes; eustatic and isostatic sea level changes in response to glaciation; quaternary stratigraphy and correlation of glacial and non-glacial events;

application of quaternary geology to economic and environmental problems; methods of paleoclimatic reconstruction.

*Lectures, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 3P24.

Credit will not be granted to students who have prior credit in GEOL 3P25.

#### ERSC 3P31

##### **Geochemistry**

Abundance of elements in crustal rocks; general geochemistry of the lithosphere, hydrosphere, atmosphere, biosphere. Geologic applications of thermodynamic principles and phase equilibria. Geochemical techniques.

*Lectures, lab, 5 hours per week.*

Prerequisites: CHEM 1P80, 1P81 or CHEM 1P90, 1P91.

Note: Students must supply their own safety equipment.

Credit will not be granted to students who have prior credit in GEOL 3P31.

#### ERSC 3P43

##### **Physical geology**

Temporal evolution and denudation of land masses in relation to tectonic, sedimentologic and climatic changes. Analysis and geologic interpretation of aerial photography, including remote sensing data from airborne and satellite imagery.

*Lectures, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 2P01.

Credit will not be granted to students with prior credit in GEOL 2P42 or 3P43.

#### ERSC 3P61

##### **Groundwater geology**

Occurrence, movement, exploration and exploitation of groundwater including the study of groundwater flow and principles of well hydraulics.

*Lectures, lab, 5 hours per week.*

Prerequisites: ERSC(GEOL) 1F95, MATH 1P97.

Credit will not be granted to students who have prior credit in GEOL 3P61.

#### ERSC 3P71

##### **Stratigraphy and carbonate sedimentology**

Principles of stratigraphy. Subdisciplines and types of units: lithostratigraphy, biostratigraphy, chronostratigraphy; contemporary ideas on the complete-

ness of the stratigraphic record; an introduction to facies models; eustatic sea level changes and sequence stratigraphy; sedimentary cycles; sedimentation and plate tectonics. Petrography of carbonate grains; recent carbonate environments; textural, structural and chemical limestone diagenesis; dolomitisation; silification and pyritisation of carbonate grains.

*Lectures, lab and local field trips, 5 hours per week.*

Prerequisites: ERSC(GEOL) 2P01, 2P31, 2P32.

Credit will not be granted to students who have prior credit in GEOL 3P71.

#### ERSC 3P91

**Applied environmental geochemistry**  
Principles of availability, mobility and accumulation of metals in the lithosphere and hydrosphere. Cycling of metals in sediments. Chemical weathering and element migration. Anthropogenic influences on metal concentration in sediments. Quality assurance of sampling procedures. Practical field work on local hydrological systems.

*Lectures, lab, local field work, 5 hours per week.*

Prerequisite: ERSC(GEOL) 3P31 or CHEM 2P42.

Note: Students must supply their own safety equipment.

Credit will not be granted to students who have prior credit in GEOL 3P91.

#### ERSC 3P92

##### **Computer modelling in groundwater hydrology**

Application of finite difference, finite element and numerical methods to stimulate groundwater movement and solute transport. Applications and limitations of advanced computer programs to model; groundwater hydraulics for confined and unconfined aquifers, two-dimensional flownets, well head protection and three-dimensional groundwater flow in homogeneous and multilayer aquifers. Simulation of transport processes and attenuation mechanisms in contaminant migration. Modelling of remedial treatments.

*Lectures, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 3P61.

Credit will not be granted to students who have prior credit in GEOL 3P92.

#### ERSC 3P94

##### **Igneous petrology**

Igneous petrogenesis, with emphasis on the physical chemistry of igneous processes; igneous rock complexes; studies of a number of petrologically important areas.

*Lectures, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 3P21.

Credit will not be granted to students who have prior credit in GEOL 3P94.

#### ERSC 3P95

##### **Special topics in earth sciences**

A course in which a student may explore areas not represented by existing courses. Under certain circumstances, a student may carry out, under faculty supervision, a detailed research project, the results of which will be presented in a major essay and a formal seminar.

Restriction: Consult the chair and supervising instructor regarding permission to register. Open only to ERSC(GEOL) (single or combined) majors with a major average of 70 percent and a minimum of 10.0 overall credits.

Prerequisite: Permission of the chair and supervising instructor.

Note: This course may be taken only once.

Credit will not be granted to students who have prior credit in GEOL 3P95.

#### ERSC 3P97

##### **Applied micropaleontology**

Taxonomy, biostratigraphy and paleoecological significance of calcareous, siliceous, phosphatic and organic-walled microfossils. Methods of collection, preparation, observation and identification of fossils of marine and freshwater benthos and plankton, and terrestrial spores and pollen. Application of microfossil assemblages to solving Earth, ecological and biological problems, such as paleoenvironmental, paleoclimatological and paleogeographic reconstruction, dating events in earth history, exploring for fossil fuels and understanding evolution and speciation.

*Lectures, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 2P32.

Credit will not be granted to students who have prior credit in GEOL 3P97.



## Earth Sciences

ERSC 3P98

### **Economic geology**

Principles and processes of the formation of metallic ore deposits, ore microscopy and ore petrology, metallogeny and theories of metallogenesis.

*Lectures, lab, seminar, 5 hours per week.*

Prerequisite: ERSC(GEOL) 3P21.

ERSC(GEOL) 3P31 is recommended.

Credit will not be granted to students who have prior credit in GEOL 3P98.

ERSC 3P99

### **Field geology**

A two-week immersion course offered after final examinations in year 3 introducing students to collecting, recording and synthesizing field data, airphoto mapping, measuring stratigraphic sections, preparing geologic maps and reports. The field area, situated in northern Ontario, consists of Archaean, Proterozoic and Paleozoic lithologies.

Restriction: Consult the department regarding permission to register. Students must have a minimum of 13.0 overall credits.

Note: Registrants are expected to defray the cost of travel, accommodation and other expenses.

Credit will not be granted to students who have prior credit in GEOL 3P99.

ERSC 4F90

### **Research and thesis**

Directed research on geological problems. Each student will undertake a research project involving field or laboratory study under faculty supervision. Students are strongly encouraged to consult with faculty members at the end of year 3 regarding supervision of thesis projects. Results of the research and thesis will be orally presented to the department.

Restriction: Open only to ERSC(GEOL) (single or combined) majors with approval to year 4.

Note: This course is required of all honors students in Earth Sciences.

Credit will not be granted to students who have prior credit in GEOL 4F90.

ERSC 4P01

### **Advanced structural geology**

Deformation mechanisms; the use of kinematic indicators; relationships between micro and macrostructures; em-

phasis in recent topics and methods in structural geology.

*Lectures, seminar, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 2P01.

Credit will not be granted to students who have prior credit in 4P01.

ERSC 4P10

### **Advanced clastic sedimentology**

Particular emphasis will be placed on the paleoenvironmental reconstruction of terrestrial and marine deposits and on bedforms and their internal stratification produced by uni-directional, oscillatory and combined flows. Seminars will supplement lectures with recent literature; a laboratory and/or field-based project will be required.

*Lectures, seminar, 5 hours per week.*

Prerequisite: ERSC(GEOL) 2P31.

Credit will not be granted to students who have prior credit in GEOL 4P10.

ERSC 4P12

### **Sedimentary geochemistry**

Thermodynamic principles of trace metal and stable isotope distributions in sedimentary rocks. Changes in rock chemistry with weathering and diagenesis. Chemical history of the oceans; evidence for and against chemical constancy. Application of elemental geochemistry to a practical project.

*Lectures, lab, 5 hours per week.*

Prerequisites: ERSC(GEOL) 3P31 and permission of the instructor.

Credit will not be granted to students who have prior credit in GEOL 4P12.

ERSC 4P16

### **Precambrian geology**

Archaean and Proterozoic evolution of the earth examining: 1) geology, tectonics, stratigraphy and history of the Precambrian; 2) evolution of the Earth's crust; 3) Precambrian time scale; and 4) evolution of life, oceans and atmospheres.

*Lectures, seminar, 4 hours per week.*

Prerequisite: ERSC(GEOL) 3P21.

Credit will not be granted to students who have prior credit in GEOL 4P16.

ERSC 4P22

### **Metamorphic petrology**

Synthesis of metamorphic textures, compositional variations and field characters with emphasis on the temperature-

pressure relations of the metamorphic rocks and the role of fluids in metamorphism.

*Lectures, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 3P21.

Credit will not be granted to students who have prior credit in GEOL 4P22.

ERSC 4P23

### **Advanced paleontology**

An advanced course in evolutionary paleobiology. Ecology of modern and ancient marine benthic communities; taphonomic models; macroevolutionary patterns in the fossil record; hierarchical approaches to evolutionary theory and the units of selection problem; heterochrony and evolution.

*Lectures, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 2P32.

Credit will not be granted to students who have prior credit in GEOL 4P23.

ERSC 4P26

### **Tectonics**

Presentation of the hypothesis of plate tectonics and its application to all aspects of earth science. Description of some major orogenic belts in terms of plate tectonics.

*Lectures, seminar, lab, 5 hours per week.*

Prerequisites: ERSC(GEOL) 2P01, 2P31, 3P21.

Credit will not be granted to students who have prior credit in GEOL 4P26.

ERSC 4P28

### **Advanced glacial sedimentology I** (Also offered as GEOG 4P28)

The sedimentology of present day glacial environments and of quaternary sediments. Thermo-mechanical principles of glacier physics as applied to past and present glacier ice conditions. Glacial lithofacies associations. Glacio-tectonics and diagenesis. Principles of glacial erosion, entrainment and deposition.

*Lectures, lab, local field trips, 5 hours per week.*

Restriction: Open only to ERSC(GEOL) (single or combined) majors with a minimum of 14.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to

year 4.

Prerequisite: ERSC(GEOL) 3P24.

Credit will not be granted to students who have prior credit in GEOG 4P28.

ERSC 4P41

**Paleoecology**

Methods of reconstructing past environments; paleoclimatology; principles of terrestrial, marine and freshwater ecosystems and recognition in the geologic record.

*Lectures, seminar, lab, 5 hours per week.*

Prerequisite: ERSC(GEOL) 2P32.

Credit will not be granted to students who have prior credit in GEOL 4P41.

ERSC 4P42

**Geochronology**

Theory and techniques for dating of Earth materials, with emphasis on Quaternary geology; radiocarbon dating, palynology, dendrochronology, varve chronology, fission tracks, thermoluminescence, paleomagnetic methods, and principles of commonly used other radiometric methods (potassium-argon, uranium-lead, etc.).

*Lectures, lab, local field trips, 5 hours per week.*

Prerequisite: ERSC(GEOL) 3P25.

Credit will not be granted to students who have prior credit in GEOL 4P42.

ERSC 4P52

**Advanced economic geology**

Non-metallic mineral deposits, industrial minerals; structural control, exploitation of ore deposits, grade and tonnage calculation.

*Lectures, lab, seminar, field trips, 5 hours per week.*

Prerequisite: ERSC(GEOL) 3P98.

Credit will not be granted to students who have prior credit in GEOL 4P52.

ERSC 4P61

**Surface hydrology**

Distribution and variation of run-off, recurrence of floods and droughts; fluvial processes and sediment transport; hydrologic and water management techniques; computer models for hydrologic and sediment analysis.

*Lectures, lab, local field trips, 5 hours per week.*

Credit will not be granted to students who have prior credit in GEOL 4P61.

# Economics

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## Officers of instruction

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### Chair

Felice F. Martinello

### Professors

Robert W. Dimand  
Mohammed H. Dore  
Joseph Kushner  
Isidore J. Masse

### Associate professors

Zisimos Koustas  
Felice F. Martinello  
Roberta E. Robb  
Lewis A. Soroka  
William Veloce

### Assistant professors

Diane P. Dupont  
Hasan Imam  
Robert Jefferson  
Thomas A. Peters  
Steven J. Renzetti  
Anthony J. Ward

### Lecturer

David R. F. Love

### Professor emeriti

Maurice F. Perkins  
Gabrielle Temkin

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## General information

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### Taro Hall 465

Economics studies how people and society choose to employ scarce resources to produce goods and services over time and distribute them for consumption among groups in society. The basic theoretical framework is divided into two parts: microeconomic theory, where the focus of analysis is on the determination of prices and the allocation of scarce resources among competing uses; and macroeconomic theory, which focusses on the level of utilization of resources--especially the levels of employment and inflation. The theoretical tools are applied to issues in the labor market, indus-

trial organization, international trade, economic development, urban studies, taxation and government expenditure. The analyses yield insights and predictions that are used to shape policy.

ECON 1P91 and 1P92 may be taken concurrently or in either order.

All students in Economics, especially those proceeding to a career in the civil service are encouraged to become proficient in a language other than English, normally French.

Mathematics is an important analytical tool for economists. All students, but especially those intending to pursue graduate work, are encouraged to take additional MATH courses. Students may consult the department regarding appropriate choices.

Students are encouraged to take COSC 1P90 or 1P98. These courses provide training in computer applications that is useful for many upper-year courses.

Students may be admitted to the BA honors program at any time. The honors program provides students with an opportunity for a more intensive examination of issues in the field. The program prepares students for many public sector jobs, research jobs in the private sector and graduate studies in economics.

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## Honors program

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### Year 1

ECON 1P91, 1P92; MATH 1P60, 1P97; one humanities and one science context credit; one elective credit.

### Notes:

1. Students with two or more OAC mathematics credits are exempted from taking MATH 1P60.
2. Students may substitute MATH 1P93 for MATH 1P97.

### Year 2

ECON 2P21, 2P22, 2P31, 2P32, 2P90; one ECON credit; MATH 1P98; one elective credit.

(for Dramatic Literature see page 155/  
for Dutch see page 187)

### Year 3

ECON 3P91; two and one-half ECON credits at the 2(alpha)90 level or above; two elective credits.

### Year 4

ECON 3P90, 4F90, 4P13, 4P14; one and one-half ECON credits at the 2(alpha)90 or above; one elective credit.

Students in the honors program are encouraged to take one or both of ECON 4P13 and 4P14 as part of their ECON requirements in third year. Students would then substitute other 2(alpha)90 or above ECON credits for these courses in their fourth year.

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## Pass program

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### Year 1 and 2

As in the honors program

### Year 3

Three ECON credits at the 2(alpha)90 level or above; two electives credits.

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## Combined major programs

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Students may take Economics as part of a combined major honors or pass program. Programs for combined degrees in Business Administration, Computer Science, Geography, Mathematics, Politics and Urban and Environmental Studies are available. Other combinations are available; students may consult the department about these programs.

Students in the combined honors programs are encouraged to take one or more of ECON 3P91, 4P13 and 4P14 as part of their ECON requirements in their third year. Students would then substitute other 2(alpha)90 or above ECON credits for these courses in their fourth year.

**Economics and Business Administration only**

## Honors program only

*Year 1*

ECON 1P91, 1P92; MGMT 1P91, 1P92; MATH 1P60, 1P97; POLI 1F90; one science or humanities context credit.

*Year 2*

ECON 2P21 or 2P23 (with permission of the department); ECON 2P22, 2P90; ACTG 2P11, 2P12; MGMT 1P95; POLI 3P50; MATH 1P98; one science or humanities context credit (whichever was not taken in year 1).

*Year 3*

ECON 2P31, 2P32; one ECON credit; FNCE 3P92, 3P93; OBHR 3P41, 3P42; MKTG 3P22, 3P24.

*Year 4*

ECON 3P90, 3P91, 4P13, 4P14; MGMT 2P40, 3P30; one credit in ACTG, ENTR; FNCE, MGMT, MKTG, OBHR; one elective credit.

**Economics and Computer Science**

## Honors program only

*Year 1*

ECON 1P91, 1P92; COSC 1P01, 1P04; MATH 1P66, 1P67, 1P97, 1P98; one science context credit.

*Year 2*

ECON 2P21, 2P22, 2P31, 2P32; COSC 2F00, 2P03; one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06 or 2Y07; one humanities context credit (see Note 1.).

*Year 3*

ECON 2P90; one and one-half ECON credits at the 2(alpha)90 level or above; COSC 3P02, 3P04; one COSC credit; one elective credit.

*Year 4*

ECON 3P90, 3P91, 4P13, 4P14; COSC 3F00; one COSC credit numbered 3(alpha)90 or above; one elective credit.

**Economics and Geography**

## Honors program

*Year 1*

ECON 1P91, 1P92; GEOG 1F90; MATH 1P60, 1P97; one humanities and one science context credit.

*Year 2*

ECON 2P21, 2P22, 2P31, 2P32; MATH 1P98 and ECON 2P90 or GEOG 2P07 and 2P10; GEOG 2P02, 2P03, 2P06 and one-half credit in GEOG.

*Year 3*

Two year 3 credits in ECON; GEOG 3P57; one and one-half GEOG credits from group A and group C at the 3(alpha)00 level or above (see Geography department calendar entry); one elective credit.

*Year 4*

ECON 3P90, 3P91, 4P13, 4P14; GEOG 4F99; one GEOG credit from group A and group C at the 4(alpha)00 level or above (see Geography department calendar entry); one elective credit.

## Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Economics and Labor Studies**

## Pass program only

*Year 1*

LABR 1F90; ECON 1P91, 1P92; POLI 1F90 or SOCI 1F90; one science and one humanities context elective.

*Year 2*

ECON 2P15, 2P21, 2P22, 2P31, 2P32, 2P90; MATH 1P98; one credit from LABR; one-half elective credit.

*Year 3*

ECON 3P24, 3P25; LABR 3F00; two credits from LABR, at least one at the 2(alpha)90 level or above; one elective credit.

**Economics and Mathematics**

## Honors program

*Year 1*

ECON 1P91, 1P92; MATH 1P12, 1P93; MATH 1P94 or 1P95; one humanities and one science context credit; one-half elective credit.

*Year 2*

ECON 2P21, 2P22, 2P31, 2P32; MATH 1P98 and ECON 2P90 or MATH 2F96 (the latter is the prerequisite for MATH 4F21 in the honors program); MATH 2F95, 2P20, 2P60.

*Year 3*

ECON 3P58, 4P58 or 3P59, 4P59; two year 3 ECON credits; MATH 2F10; one elective credit.

*Year 4*

ECON 3P58, 4P58 or 3P59, 4P59 (whichever was not taken in year 3), 3P90, 4F90, 4P13, 4P14; MATH 4F21; one-half elective credit.

*Note:*

MATH 2F96 is a prerequisite for MATH 4F21 and must be taken for the honors program.

## Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Economics and Politics**

## Honors program

*Year 1*

ECON 1P91, 1P92; MATH 1P60, 1P97; POLI 1F90; one humanities and one science context credit.

*Year 2*

ECON 2P21, 2P22, 2P31, 2P32; MATH 1P98, ECON 2P90; two POLI credits including POLI 2P01 and 2P80.

*Year 3*

Two year 3 ECON credits; two year 3 POLI credits; one elective credit.

## Economics

### Year 4

ECON 3P90, 3P91, 4P13, 4P14; two year 4 POLI credits (including POLI 3P91 or 3P92); one elective credit.

### Notes:

1. POLI 2F90 is recommended instead of 2P01;

2. If POLI 2P01 is taken, then one-half credit from POLI 3P04, 3P06, 4P01, 4P02 or 4V00-4V09 is required by the end of year 4;

3. One of POLI 3P12 or 4P30 is required.

### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

### Economics and Urban and Environmental Studies

#### Honors program

##### Year 1

ECON 1P91, 1P92; MATH 1P60, 1P97; UEST 1F90; one humanities and one science context credit.

##### Year 2

ECON 2P21, 2P22, 2P31, 2P32; MATH 1P98; UEST 2F96, 2F97; COSC 1P90 or 1P98.

##### Year 3

ECON 2P90, two ECON credits at the 2(alpha)90 level or above; two year-three UEST credits including at least one-half credit from UEST 3V10-15, 3V20-24, 3V25-29 or 3V30-34, but excluding 3V80 to 3V81; one-half elective credit.

##### Year 4

ECON 3P90, 3P91, 4P13, 4P14; UEST 4F90 and 4F91 or UEST 4F95 plus one other credit in UEST; one elective credit.

### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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### Bachelor of Business Economics

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See separate calendar entry for Bachelor of Business Economics degree requirements and for transition to the honors Economics degree.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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**Please note that not all courses are offered in every session. Refer to applicable term timetable for details.**

#### ECON 1P91

##### Principles of microeconomics

An introduction to microeconomics. Topics include the nature of economics, the price system, demand, production and cost, markets and pricing, factor pricing and the distribution of income.

*Lectures, seminar, 4 hours per week.*

Credit will not be granted to students who have prior credit in ECON 190.

Note: May be taken concurrently with, before or after ECON 1P92.

#### ECON 1P92

##### Principles of macroeconomics

An introduction to macroeconomics. Topics include: the nature of economics, the determination and control of national income, money, banking and monetary policy, macroeconomic policy and the balance of payments.

*Lectures, seminar, 4 hours per week.*

Credit will not be granted to students who have prior credit in ECON 190.

Note: May be taken concurrently with, before or after ECON 1P91.

#### ECON 2F95

##### Canadian economic policy (also offered as LABR 2F95)

Canadian economic and business problems and policies. Specific topics will vary from year-to-year and may include stabilization policies, competition policies, tax policies, foreign trade and exchange policies.

*Lectures, 3 hours per week.*

Prerequisites: ECON 1P91, 1P92.

#### ECON 2P09

##### Canadian economic history (also offered as LABR 2P09)

The economic development of Canada.

*Lectures, 3 hours per week.*

Prerequisites: ECON 1P91, 1P92.

#### ECON 2P10

##### United States economic history

The economic development of the United States.

*Lectures, 3 hours per week.*

Prerequisites: ECON 1P91, 1P92.

#### ECON 2P11

##### European economic history

The economic history of the Western World including an analysis of the factors explaining the Industrial Revolution.

*Lectures, 3 hours per week.*

Prerequisites: ECON 1P91, 1P92.

#### ECON 2P15

##### The economics of unions

(also offered as LABR 2P15)

The study of labor unions in the marketplace. Typical topics: the labor legislation covering unions; the effects of unions on wages, fringes, turnover, inequality and the productivity and profitability of firms; union behavior; the certification process; strikes; interest arbitration; public-sector unionism.

*Lectures, 3 hours per week.*

Prerequisites: ECON 1P91, 1P92.

#### ECON 2P17

##### Economic development

The economic factors affecting the growth of developing countries. Topics examined include: growth models, inequality and poverty, education, urbanization, agriculture, international trade and the historical emergence of today's underdeveloped nations.

*Lectures, 3 hours per week.*

Prerequisites: ECON 1P91, 1P92.

Credit will not be granted to students who have prior credit in ECON 317hc.

#### ECON 2P21

##### **Intermediate microeconomics I**

The fundamental demand and supply model including individual consumer and producer theory, the basic market structure of a perfectly competitive industry and an introduction to imperfectly competitive markets. Applications of theory are emphasized throughout the course.

*Lectures, seminar, 4 hours per week.*

Prerequisite: ECON 1P91.

Credit will not be granted to students who have prior credit in ECON 201, 203, 251hc or 2P23.

#### ECON 2P22

##### **Intermediate macroeconomics I**

The main determinants of aggregate output and national income in an open economy with the basic IS-LM model. Topics will include: money and interest, trade and capital flows under different exchange rate regimes.

*Lectures, seminar, 4 hours per week.*

Prerequisite: ECON 1P92.

Credit will not be granted to students who have prior credit in ECON 202, 203, 252hc.

#### ECON 2P23

##### **Managerial economics**

The application of fundamental microeconomic concepts to business decision making. Topics include: consumer theory, production theory and the various market structures.

*Lectures, seminar, 4 hours per week.*

Restriction: Not open to ECON (single or combined) majors.

Prerequisite: ECON 1P91.

Credit will not be granted to students who have prior credit in ECON 201, 203, 2P21.

Note: This course is primarily designed for students in the honors Business Administration program.

#### ECON 2P31

##### **Intermediate microeconomics II**

A continuation of ECON 2P21. Topics include: the models of market structure such as monopoly, duopoly, oligopoly

and monopolistic competition; the demand and supply of factors of production under perfect and imperfect markets; and an introduction to the general equilibrium model and welfare theory. Applications of theory are emphasized.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

Credit will not be granted to students who have prior credit in ECON 201, 203.

#### ECON 2P32

##### **Intermediate macroeconomics II**

A continuation of ECON 2P22 with an extension of the macroeconomic model to include the price level. Both aggregate demand and aggregate supply are studied. Topics will include: money supply, inflation, unemployment and the effectiveness of monetary and fiscal policy in an open economy.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P22.

Credit will not be granted to students who have prior credit in ECON 202, 203.

#### ECON 2P90

##### **Introduction to econometrics**

Probability, random variables and density functions; correlation analysis; estimation and hypothesis testing in the classical linear regression model. Practical applications to different areas of economics and business.

*Lectures, seminar, 4 hours per week.*

Restriction: Not open to MATH (single or combined) majors.

Prerequisites: ECON 1P91, 1P92 and MATH 1F92 or 1P98.

#### ECON 3F02

##### **History of economic thought**

The development of economic analysis including mercantilism, the classical school, Marx, marginalism, Keynes and others.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

#### ECON 3F03

##### **Money and banking**

Topics include: the flow of funds, a detailed analysis of the demand for and supply of money, the level and structure of interest rates, the behavior of financial institutions and issues in monetary policy.

*Lectures, 3 hours per week.*

Prerequisites: ECON 2P21 or 2P23 and ECON 2P22.

#### ECON 3F06

##### **Industrial organization**

The structure, conduct and performance of industrial markets with readings on the role of government in maintaining effective competition.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

#### ECON 3F07

##### **Comparative economic systems**

Alternative economic systems, including centrally directed economies, with emphasis on planning as a substitute for markets.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

#### ECON 3P11

##### **International trade**

The pure theory of international trade and commercial policy.

Prerequisite: ECON 2P21 or 2P23.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in ECON 301 or 4P21.

#### ECON 3P12

##### **International payments**

Foreign exchange markets and the balance of payments, adjustment in the balance of payments and international monetary institutions.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P22.

Credit will not be granted to students who have prior credit in ECON 301 or 4P21.

#### ECON 3P13

##### **Economics of the multinational enterprise**

Economic theory of and public policy towards the multinational enterprise. Topics include: theories of foreign direct investment, macroeconomic and microeconomic effects of direct investment in host countries, home country issues, industry studies, public policy towards multinationals.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23 (ECON 3P11 is recommended).

## Economics

### ECON 3P14

**Public sector economics: expenditure**  
The role and nature of the government sector; economics of public expenditure with reference to equity and efficiency considerations; techniques of public expenditure analysis; intergovernmental fiscal relations and economics of public debt.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

Credit will not be granted to students who have prior credit in ECON 304 or 4P15.

### ECON 3P15

#### **Public sector economics: taxation**

An introduction to the theory of taxation; economic consequences of various federal and provincial taxes. Theory of optimum taxation; analysis of Canadian tax system.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

Credit will not be granted to students who have prior credit in ECON 304 or 4P15.

### ECON 3P16

#### **Economic growth and business cycles**

The features of business cycles as well as the main theories that attempt to explain the cyclical fluctuation of total output and employment. Attention will also be given to postwar business cycles in Canada.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P22.

### ECON 3P18

#### **Urban economics**

Theories of location, city formation and urban spatial structure. Selected urban problems, e.g., housing, transportation, poverty, financing of municipal governments and the economics of city size. Social welfare implications of problems and policies are stressed.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

Credit will not be granted to students who have prior credit in ECON 308.

### ECON 3P19

#### **Regional economics**

Theories of regional income determination; classical and other theories of regional growth; regional business cycles. Canadian regional disparities and the nature of the 'Canadian Economic Un-

ion'. Regional development policies in Canada, the U.K. and France.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P22.

Credit will not be granted to students who have prior credit in ECON 308.

### ECON 3P24

#### **Labor economics**

(also offered as LABR 3P24)

Introduction to the economics of the labor market. Topics include: the demand for labor; the supply of labor; investment in human capital. Policy applications are stressed.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

Credit will not be granted to students who have prior credit in ECON 205.

### ECON 3P25

#### **Topics in labor economics**

(also offered as LABR 3P25)

Topics may vary from year-to-year, but examples are as follows: the economics of trade unions; discrimination in the labor market; unemployment; labor migration; unemployment and inflation.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

(ECON 3P24 is recommended.)

Credit will not be granted to students who have prior credit in ECON 205.

### ECON 3P26

#### **Monetary theory**

Theories of the role of money in the determination of output and the price level, starting from the controversies of the banking and currency schools. Other topics include: the quantity theory of money, interpretations of Keynes, as well as the quantity theory in the form of Rational Expectations. Emphasis on contemporary issues such as government deficit-financing and money neutrality.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P22.

Credit will not be granted to students who have prior credit in ECON 4P26.

### ECON 3P27

#### **The economics of natural resources**

The application of economic analysis to the management of natural resources; market failure, environmental efforts and conservation policies; both non-renewable resources such as minerals and

oil and renewable resources such as fisheries will be considered.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

### ECON 3P58

#### **Operations research methods A**

(also offered as MATH 3P58)

Principles of operations research; Lagrange multipliers, with applications to LP; network models and generalized network models; elements of dynamic programming; scheduling (criteria and algorithms); integer programming (theory and practice); elements of quadratic programming; optimization and quasi-Newton methods; discussion and analysis of selected cases.

*Lectures, 4 hours per week.*

Prerequisite: MATH 2P60.

*Note:*

*ECON 3P58, 4P58 and 3P59, 4P59 are offered in alternate years.*

### ECON 3P59

#### **Operations research methods B**

(also offered as MATH 3P59)

Principles of modelling; decision theory, subjective probability and Bayesian statistics; simulation; sampling theory; design and analysis of experiments; discussion and analysis of selected cases.

*Lectures, 4 hours per week.*

Prerequisite: MATH 2P60 or permission of the instructor.

### ECON 3P90

#### **Intermediate econometrics**

Specification, estimation, hypothesis testing and prediction with the classical linear regression model. Relaxation of some of the standard assumptions of the regression model pertinent to economic modelling such as autocorrelation, heteroscedasticity, stochastic regressors will be studied. An introduction to simultaneous equations modelling. Course blends theory and application with examples taken from many different areas of economics.

*Lectures, 3 hours per week.*

Prerequisites: ECON 2P21 or 2P23; 2P22, 2P90 and MATH 1P97 or permission of the department.

Credit will not be granted to students who have prior credit in ECON 4P12.

## ECON 3P91

**Mathematical economics**

The application of quantitative techniques to economic theory and business problems. Quantitative techniques will include differential calculus, integral calculus, differential and difference equations and matrix algebra. Applications of quantitative techniques to business and economics will include inventory control, maximizing tax revenues, utility maximization, producer and consumer surplus, growth theory, etc. Wherever possible the application of the quantitative techniques will be explained in an economic context.

*Lectures, 3 hours per week.*

Restriction: Not open to MATH (single or combined) majors or general studies students.

Prerequisites: ECON 2P21 or 2P23, ECON 2P22 and MATH 1P97.

## ECON 3P92

**Forecasting in economics**

Forecasting methods in business and economics such as: time series extrapolative methods, Box-Jenkins and econometric model based approaches. Combined forecasting methods and their evaluation. Practical applications in business and economics will be emphasized.

*Lectures, 3 hours per week.*

Prerequisites: ECON 2P21 or 2P23; ECON 2P22 and 2P90.

## ECON 3P95

**Topics in applied econometrics**

Econometric techniques in the specification, estimation and testing of economic models with emphasis on practical issues and problems. Possible topics are: estimation of household demand systems, production and cost functions, input demand systems, demand for money, macroeconomic models, demand for consumer durables, rational expectations models, capital asset price models and money-income causality analysis.

*Lecture, 3 hours per week.*

Prerequisites: ECON 3P90, 3P91.

## ECON 4F90

**Research topic**

A program of reading and research under the supervision of a member of the faculty.

Restriction: Open only to ECON (single or combined) majors with approval to year 4.

## ECON 4P13

**Advanced macroeconomics**

Advanced macro theory supplemented with readings and discussions of recent periodical literature.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P32, 3P91 or permission of the instructor.

## ECON 4P14

**Advanced microeconomics**

Advanced micro theory with emphasis on mathematical presentation. Topics covered will include: theory of consumer behavior, theory of the firm, imperfect competition, general equilibrium and welfare economics. Optional topics include: behavior under uncertainty, risk and asymmetric information.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P31, 3P91 or permission of the instructor.

## ECON 4P15

**Advanced public finance**

Selected topics in taxation and public expenditure will be discussed. Topics in taxation such as incentive effects of taxation on labor supply, saving and risk-taking, analysis of tax incidence and theory of optimal taxation; topics in public expenditure such as theory of public goods, public enterprises, cost-benefit analysis, intergovernmental fiscal relations and theory of social choice.

*Lectures, 3 hours per week.*

Prerequisites: ECON 2P31, 2P32 and 3P91 or permission of the department.

## ECON 4P21

**Advanced international economics**

Selected topics in international trade and finance. Topics in international trade may include: recent theories of trade, strategic behavior in trade policy, tariff and non-tariff barriers and the theory of economic integration; topics in international finance may include: the recent theories of balance of payments and exchange rate determination, exchange rate dynamics, currency substitutions and international monetary arrangements.

*Lectures, 3 hours per week.*

Prerequisites: ECON 2P31, 2P32 and

3P91 or permission of the department.

## ECON 4P26

**Advanced monetary economics**

The role of money in the macroeconomy: money demand and supply, multi-asset models, the theory of stabilization policy, rational expectations, rules versus discretion, recent Canadian monetary policy, inflation and real interest rates and money and economic growth.

*Lectures, 3 hours per week.*

Prerequisites: ECON 2P31, 2P32 and 3P91 or permission of the department.

## ECON 4P58

**Operations research applications A**  
(also offered as MATH 4P58)

Practice of operations research, investment and applications of LP to project selection; capital growth; further dynamic programming; location problems; inventory problems; cash flow as an inventory problem; personnel planning, actuarial problems; discussion and analysis of selected cases.

*Lectures, 4 hours per week.*

Prerequisite: ECON 3P58 or permission of the instructor.

*Note:*

*ECON 3P58, 4P58 and ECON 3P59, 4P59 are offered in alternate years.*

## ECON 4P59

**Operations research applications B**  
(also offered as MATH 4P59)

Applications of modelling; game theory (Nash equilibrium; two player NZS games, Nash co-operative solution and others); Shapley value, voting power; values of non-atomic games; advertising and sales forecasting in heterogeneous markets; information theory, encoding, cryptography, security and reliability; classification and clustering; models of biological competition and military combat; discussion and analysis of selected cases.

*Lectures, 4 hours per week.*

Prerequisite: ECON 3P59 or permission of the department.



# Faculty of Education

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## Officers of instruction

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### Dean

R. Terrance Boak

## Continuing Studies Program

### Director

Victor D. Cicci

Instructors for the program are selected from the departments of Graduate and Undergraduate Studies in Education and Pre-service Education as well as from part-time instructors.

## Department of Graduate and Undergraduate Studies in Education

### Chair

Kristian Kirkwood

### Professors

R. Terrance Boak  
Ronald W. Common  
Patricia A. Cranton  
Robert Knoop  
John M. Novak  
G. Patrick O'Neill  
Alan E. Wheeler

### Associate professors

Kristian Kirkwood  
Leonard A. Popp  
Cecilia Reynolds  
James Wagner

### Assistant professors

Richard Bond  
Susan M. Drake  
Glen Jones  
Michael Kompf  
Vera Woloshyn  
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## Department of Pre-service Education

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## General information

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The Faculty of Education is a fully integrated part of the University occupying its own building on campus. It has its own gymnasium and instructional resource centre including a well equipped micro-computer lab.

The Faculty offers programs and courses leading to BEd and MEd degrees on both the Brock campus and Dundas campus (located in Central Public School, Dundas) with some selected Continuing Studies and MEd courses offered in Mississauga and Hamilton. The Faculty also provides courses which can be used as electives in undergraduate programs in the University.

Bachelor of Education programs are field-oriented and are based on an approach unique in Ontario. Much of the orientation to and instruction in professional practice takes place under the su-

per vision of counsellors working with small groups of students in teaching centres located in schools throughout the Niagara Peninsula and the regions of Hamilton-Wentworth, Haldimand and Halton. Candidates who are accepted into the BEd program to teach in secondary schools are assigned to work with specialized subject area tutors in high schools throughout this same area.

Those interested in a teaching career in Ontario are advised to read Ministry of Education regulations with respect to teachable subjects as outlined below.

A four-year concurrent program in Child Studies leading to combined BA/BEd and BSc/BEd degrees and teacher certification is also available.

## Graduate programs

The Faculty of Education offers a Master of Education degree in curriculum studies, foundations of learning and teaching behavior and educational administration. For further information and course listings, refer to the *Graduate Calendar* or contact the Office of the Registrar.

## Undergraduate courses

Undergraduate courses for those interested in obtaining a greater understanding of the field of education are offered for both full- and part-time students. Undergraduate degree credit may be given for EDUC 1F90, 2F00, 2F01, 3F01, 3P50, 3P52, 4P01.

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## Bachelor of Education programs

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The Faculty offers three programs leading to the conferring of the BEd degree. In addition, the Faculty co-operates with other departments in offering concurrent programs leading to the conferring of a BA/BEd or BSc/BEd.

### Program I: Pre-service program

A BEd program leading to Ontario Ministry of Education certification to teach in the province in the form of the Ontario Teacher's Certificate (OTC).

**Program II: Continuing Studies program**

A BEd program open to educators wishing to further their professional education beyond the basic level in specialized areas. Although the program is designed specifically for those who already hold an undergraduate degree and the OTC, enquiries from those who possess equivalent\* background are welcomed.

Under the condition noted in program requirements, candidates who hold the OTC at the time of their admission to the program and who successfully complete specified courses in the program will be recommended to the Ministry of Education for the endorsement of their OTC for additional qualifications.

\*Equivalence to the OTC will be determined by the Director of the Continuing Studies Program. In general, possession of a teaching qualification valid in a publicly supported school system or a minimum of two years experience teaching in an educational setting for which teacher certification is not a prerequisite for employment would be considered as equivalent.

**Program III: First degree BEd program**  
A BEd program leading to the conferring of the BEd as a first degree.

**Concurrent programs**

Brock University offers three concurrent programs: a pass BA/BEd program in Child Studies (Primary/Junior), a pass BSc/BEd program in Science (Junior/Intermediate) and a pass BSc/BEd program in Mathematics (Junior/Intermediate).

**Program I: Pre-service Bachelor of Education program****Admission requirements**

Candidates are expected to have some experience in working with children and youth of the age group in the program for which they are applying.

Enrolment in the Faculty of Education is limited to approximately 350 positions. Applicants must have completed the requirements for a bachelor's degree acceptable to Brock University prior to the beginning of classes in September. Selection will be based on the academic average of the best ten university credits, on experience as submitted on the Brock Experience Profile form and on acceptable references. Only candidates with a minimum B average (75 percent at Brock) on their top ten credits will be considered. Because the experience profile is a significant part of the selection process, applicants should fill it out with care.

Applications must be received at the Ontario Universities' Application Centre by the date specified on the application material for admission to the September 1994 program. All supporting documentation (work experience profile, letters of reference, \$40 service fee) must be received by the Admission's Office, Brock University by February 1, 1994. Only information received by February 1, 1994 date will be considered part of the admission file.

**Note:**

Students will be required to attend some off-campus courses and programs. Transportation to these courses and programs are also the responsibility of the student.

**Primary/Junior (Grades K-6).**

Candidates are encouraged to have an area of concentration related to school curriculum. Some preference will be given to primary/junior candidates with a major in Child Studies.

**Junior/Intermediate (Grades 4 -10)**

Candidates must have at least THREE credits in one of the teachable areas as listed under program requirements.

**Intermediate/Senior (Grades 7-OAC)**

Candidates must have at least FIVE credits in one teachable area and THREE credits in a second teachable area as listed under program requirements. Dur-

ing the teaching education year, each candidate will participate in two tutorials, one in each teachable subject.

*Note:* An extension of the secondary program is offered in co-operation with the University of Waterloo. Admission is limited to students enrolled at the *University of Waterloo with a major in French*. For details see the Brock coordinator, French teaching specialization.

In addition to the general requirements outlined above, candidates for the OTC shall submit the following:

- (a) a certificate of birth or baptism or other acceptable proof of the date and place of birth;
  - (b) a certificate of change of name where applicable;
  - (c) proof of freedom from active tuberculosis (O. Reg. 297).
- Candidates must also:
- (d) be able to demonstrate an acceptable level of fluency and accuracy in spoken and written English;
  - (e) attend an interview and/or submit a written resume if requested.

*Note:* An applicant who is not a Canadian citizen or landed immigrant may be admitted to the program for a BEd degree. Such persons are eligible for the OTC program where they show evidence of authorization to work in teaching in Canada. Such persons receive a temporary letter of standing (O. Reg. 297).

Because of the highly integrated nature of the program, candidates who have pre-registered must be present for orientation on registration day.

Candidates who have already completed part of their teacher training elsewhere may be accepted for the BEd/OTC on a part-time basis. For regulations and program details, see the department chair.

## Education

### Program requirements

The candidates in Program I are expected to select one of the following areas of concentration.

Primary/Junior division

(Grades K-6)

Junior/Intermediate division

(Grades 4-10)

Intermediate/Senior division

(Grades 7-OAC)

Program requirements extend over six areas:

1. Candidates specializing at the Junior/Intermediate level must select one teachable subject at the Junior/Intermediate level. Teaching subjects offered are as follows:

Dramatic arts

English

Environmental science

French (second language)

Geography

History

Mathematics

Music--vocal

Physical and health education

Science--general

Visual arts;

Candidates specializing at the Intermediate/Senior level must select two teachable subjects at the Intermediate/Senior level. Teaching subjects offered are as follows:

Accounting

Computer science

Data processing

Dramatic arts

English (first language)

French (second language)

Geography

German

History

Information management

Italian

Marketing and merchandising

Mathematics

Physical and health education

Science--biology

Science--chemistry

Science--general

Science--physics

Spanish

Visual arts;

2. Studies in Education including learning and human development throughout the primary, junior, intermediate and senior division;

3. Teaching methods designed to meet the individual needs of pupils;

4. The acts and regulations respecting Education;

5. A review of the curriculum guidelines related to all of the divisions and a study of curriculum development;

6. At least ten weeks of practical experience in schools.

The above program requirements may be met through the successful completion of a combination of compulsory and elective courses.

The following patterns reflect the combination of compulsory and elective courses necessary to meet Ministry certification requirements.

*Compulsory courses for all students:*

EDUC 8D09, 8F08, 8P06, 8Y04, 8Y05.

*Teaching options:*

Depending on the selected concentration and subject background, each student will select from the following:

Primary/Junior

EDUC 8P30, 8Y31, 8Y32; one-half credit from EDUC 8Y34, 8Y35, 8Y36;

Junior/Intermediate

EDUC 8Y20, 8Y21, 8Y22, 8Y23; one-half credit from EDUC 8Y24, 8Y25, 8Y26, 8Y27;

Intermediate/Senior

EDUC 8P70; one credit from EDUC 8P65, 8P66, 8P68, 8P69, 8P71, 8P72, 8P73, 8P74, 8P75, 8P76, 8P77, 8P78, 8P80, 8P81, 8P82, 8P83, 8P84, 8P86, 8P87.

*Notes:*

1. For information concerning prerequisites for teaching subjects, refer to the section on program admission requirements.

2. Candidates considering Spanish or German as teachable subjects are advised that in Ontario schools there are, at present, very few classes being taught in those subjects.

In addition to the above requirements the Faculty offers a number of non-credit elective courses which are mounted in order to meet with student interest and professional need. Typical offerings include: audio visual, computer literacy, drama, guidance, outdoor education, religion (R.C.), religion (other).

Candidates who successfully complete one of the patterns described above will be recommended to the Ministry of Education, Government of Ontario, for the award of an Ontario Teacher's Certificate. For full-time students, these courses are co-requisite and must be taken concurrently. Students will, in consultation with their faculty adviser, choose elective courses as may be appropriate to their academic background and professional plans. An essential part of the Pre-service program is visitation to schools for at least ten weeks of observation and EDUC 8D09 teaching. A student whose performance in EDUC 8D09 is recorded as seriously inadequate will be assessed by the co-ordinator of student teaching or his/her designate. The result of this assessment will determine eligibility to proceed in EDUC 8D09. In the interest of the pupils' welfare, the Faculty will exercise the responsibility to remove a student from the classroom where performance so warrants.

*Note: Students will be required to attend some off-campus courses and programs. Transportation to these courses and programs are the responsibility of the student.*

*For further information regarding Program I, candidates should contact the chair, Department of Pre-service Education.*

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**Brock University-Mohawk College  
Technological Education program**


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**Admission requirements**

Bachelor of Science degree in engineering or equivalent field, plus a minimum of two years related experience;

or

a degree from a recognized university, plus a minimum of five years of work experience\* in a recognized trade or technology area listed below;

or

a degree from a recognized university plus a three-year technology diploma from a college of applied arts and technology in one of the fields listed below plus a minimum work experience\* which will total five years including the CAAT diploma.

\*The work experience must include a minimum of 16 months of continuous employment. Work experience must be supported by sworn statements or official documents from personnel managers and/or other persons, on company letterhead and must specify the nature of the work and experience and years and months of experience. It must be in the subject area in which the student wishes to teach.

Self-employed applicants must provide an official sworn statement attesting to the specific nature and duration of their work experience, including a letter from their accountant. They will also be subject to an interview process by which they will be able to demonstrate or prove their competency in a specific technology area.

**Design and Technology stream**

A general degree from a recognized university and proven aptitude for workshop technology are required. The candidate must have a definite interest and experience in technology.

Students admitted to either program

must submit the following, before classes begin:

(a) certificate of birth or baptism or other acceptable proof of date and place of birth;

(b) a certificate of change of name where applicable;

(c) evidence satisfactory to the University of academic qualifications; and

(d) proof of freedom from active tuberculosis (dated after October, 1991).

**Application procedure**

Applications are available at the Admission's Office and must be received by the date specified in OUAC 205 application form. Supporting documentation involving a university transcript, an experience profile, a résumé of technological experience, proof of wage earning experience and two letters of reference must be received by the date specified in OUAC 205 application form.

**Program requirements***Phase I*

Mohawk College of Applied Arts and Technology:

Students will register in EDUC 9F24.

This is a 80 hour program offered at the Mohawk CAAT campus during August.

Students are provided with a hands-on workshop technology program in wood and metal for 4 hours per day. A further 20 hours will be provided the first term from September to December. This course is the equivalent of an additional basic qualifications course in design and technology and it will be accredited on the Ontario Teacher Qualifications Record upon successful completion of the Bachelor of Education program.

*Phase II*

Brock University BEd program:

This is the secondary teacher education program, intermediate/senior.

Compulsory courses for all students:

EDUC 8D09, 8P70, 8Y04, 8Y05, 8F10; 8P06 or 8P07.

In the Design and Technology stream, students take EDUC 8Q98 as the first teachable subject course and an academic teachable subject from Schedule A of Regulation 297, Ontario Teacher Qualifications - (see Pre-service program requirements intermediate/senior teaching options listed on page 122 in the calendar).

In the Technological Education stream, students will take two teachables from one of the areas of communications, construction, manufacturing or transportation. One teachable must be a broad-based technology in one of the above areas and the other must be chosen from a specific technology course in the same area. One or both subjects will be taken at the basic (instruction at grades 9 and 10) level and only one may be taken at the advanced (instruction of grades 11, 12 and OAC where indicated) level depending upon the extent of technological ability as determined by the program coordinator. It is important to note that technical proficiency examinations (TPE) are required in both the first and second teachable subjects.

**Communications**

Art (vocational)\*  
Communications technology  
Computer electronics  
Drafting comprehensive  
Electronics\*  
Graphic communication\*  
Music (vocational)\*  
Photography

**Construction**

Architectural drafting and design  
Construction services\*  
Construction technology  
Electricity\*  
Environmental control  
Plumbing\*  
Sheet metal\*  
Trowel trades  
Woodworking\*

## Education

### Manufacturing

Control systems\*  
Engineering drafting and design  
Foundry and moulding practice\*  
Industrial electrics  
Manufacturing technology  
Metal fabrication\*  
Precision machining

### Transportation

Agricultural equipment  
Aircraft\*  
Automotive\*  
Auto body\*  
Small powered equipment  
Transportation technology

For course descriptions see page 130.

\*Related technology areas require a Certificate of Qualification or Certificate of Apprenticeship or equivalent standing from a university, polytechnical institute or college of applied arts and technology.

### Phase III

Mohawk College of Applied Arts and Technology:

Students will register in EDUC 9F25.

A 20 hour portion of this course will be provided during the January to April term of the program. The remaining 80 hours will be completed in May. Accreditation for this course will be given as an additional qualification course upon successful completion of the first-year of teaching.

### Program completion

Successful completion of this program will result in the student being recommended to the Ministry of Education, Ontario, for the award of an Ontario Teacher's Certificate and the following:

#### Design and Technology candidate

The student will have a Bachelor of Education and certification to teach design and technology plus a second academic subject area provided he/she meets the necessary prerequisite requirements. Also, the student will receive a design and technology additional qualification

for Part I (EDUC 9F24), after completion of the BEd, and Part II (EDUC 9F25), after one-year of successful teaching experience in that field.

#### Technological Education candidate

The student will have a Technological Education Certificate to teach two subjects in one of communications, construction, manufacturing and transportation technology, as well as a Bachelor of Education. Also, the student will receive a design and technology additional qualification for Part I after the completion of the BEd and Part II after one year of successful teaching experience in that field.

### Technological Education methodology courses

All of the courses outlined below are offered at the basic (instruction of grades 9 and 10) level and the advanced (instruction of grades 11, 12 and OAC where indicated) level and consist of 40 contact hours.

The student is placed in a basic or advanced course according to his/her technological background and ability. In addition to satisfactorily completing the course, the student must pass a technical proficiency examination (TPE) at the basic or advanced level. A student who completes the basic course and the TPE satisfactorily may upon graduating and receiving the Ontario Teacher's Certificate enrol in an additional qualifications course, where available, to obtain advanced level certification.

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### Program II: Continuing Studies Bachelor of Education program

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#### Admission requirements

Candidates for admission are required to hold an undergraduate degree acceptable to Brock University or the OTC. Candidates who hold the OTC but who have not completed the requirements for an undergraduate degree may be admitted to Program II and complete the require-

ments for the BEd. The conferring of the degree will be withheld until evidence of the attainment of the undergraduate degree is presented to the Office of the Registrar.

#### Note:

The Program II BEd degree does not lead to the basic teacher certification (OTC) in Ontario. Those interested in obtaining the Ontario Teacher's Certificate should refer to the Program I BEd description.

All candidates admitted to the BEd Program II should note, however:

1. Transcripts showing work completed towards the degree will be available from the Office of the Registrar;
2. Recommendation to the Ministry of Education for endorsement of the OTC is not dependent on a candidate's completing the total requirement for the BEd degree;
3. EDUC courses numbered 9(alpha)00 and above may not be used for initial basic certification (OTC) purposes.

#### Advanced standing

Candidates for admission to Program II may be granted advanced standing in one credit at the time of initial application. Advanced standing will be based on the relationship between work already completed and the content of courses required for the Brock degree. Advanced standing will not be granted on the basis of courses credited towards a completed degree or diploma unless such courses have been taken as electives beyond the minimum requirement for the degree or diploma. Students completing Continuing Studies courses prior to June 30, 1979 cannot count these courses towards the Program II BEd degree. For further information, contact the Director of the Continuing Studies Program.

#### Note Re: QECO

The University has been advised that the Qualifications Evaluation Council of Ontario (QECO) normally accepts each course in the BEd (Program II) program as either a university credit or a Ministry course credit depending upon how the

course credit depending upon how the individual wishes the course applied. However, the University cannot guarantee the applicability of any specific course to QECO insofar as salary evaluation is concerned. Students who have concerns in this regard should contact QECO directly.

Where Ministry of Education regulations require documentation of qualifications (i.e., experience, specialized employment), it is the responsibility of the student to provide this documentation to the Director of the Continuing Studies Program in the Faculty of Education. Documentation must be complete before any recommendation can be made to the Ministry.

### Program requirements

Candidates entering Program II are required to complete a minimum of five credits numbered EDUC 9(*alpha*)00 or above, of which a minimum of three will be in a specialized area of study. Specialized areas of study may be identified in the course descriptions by sequential titling, e.g., EDUC 9F11, Teaching French as a second language, part I; EDUC 9F12, Teaching French as a second language, part II; and EDUC 9F13, Teaching French as a second language, part III. Students who already hold the OTC and who successfully complete courses numbered 9(*alpha*)00 or above will be recommended to the Ontario Ministry of Education for appropriate endorsement of the OTC.

Normally, candidates in this program will hold an Ontario Teacher's Certificate and an acceptable undergraduate degree. Candidates holding neither of the above qualifications may be admitted as special students. Special students will not receive Ministry recognition for courses taken prior to holding the Ontario Teacher's Qualifications Certificate or Temporary Letter of Standing. University regulations require that a copy of the Ontario Teacher's Qualifications Record Card be on file and, for those students proceeding toward the BEd Program II degree, an official copy of a transcript showing an appropriate university degree.

Students should note that the number of hours required for successful completion of these courses is in excess of the number of hours normally allocated to a one credit course at Brock. The increase is required to satisfy the practicum component.

#### Note:

All Continuing Studies courses have minimum and maximum enrolments. Courses with enrolments of fewer than 20 students may be cancelled. Candidates are encouraged to apply early. For further information and details of Program II requirements, candidates should consult the Director of the Continuing Studies Program.

### Program III: BEd as a first degree

(Does not lead to Ontario certification.)

#### Admission requirements

Generally speaking, the admission requirements for admission to the BEd Program III are the same as those for admission to other undergraduate degrees offered by the University. In addition, the Department of Graduate and Undergraduate Studies normally requires that candidates provide evidence of sustained and continuing career interest in an education related occupation. Interested candidates should first contact the chair of the Department of Graduate and Undergraduate Studies in the Faculty of Education.

#### Program requirements

Programs of study are individually approved by the Department of Graduate and Undergraduate Studies and are usually greater than the minimum requirements outlined below, dependent on the applicant's background. The minimum requirement is ten credits including the following:

Five arts and/or science credits beyond introductory or first-year level;

Three credits beyond introductory or first-year level from the Faculty of Edu-

cation or others as approved by the Department of Graduate and Undergraduate Studies; and

EDUC 3F99, study undertaken with the guidance and supervision of an assigned faculty adviser.

Note: Should a student's program include graduate courses in Education, such courses carry credit for the BEd degree only.

### Description of courses

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

#### (Undergraduate courses)

EDUC 1F90, 2F00, 2F01, 3F01, 3P50 and 3P52 are available either as electives or as part of a General or Integrated Studies program. Participants need not be teachers nor do they need to take these courses to enter a teacher certification program.

For a General Studies degree, Education may only be used as the three-credit component and only in a pass degree.

#### EDUC 1F90

##### Introduction to education studies

Major issues and problems in the organization, staffing and planning of schools and school services today.

*Lectures, seminars, 3 hours per week.*

#### EDUC 2F00

##### Curriculum theory and design

Curriculum as a conceptual framework which guides decisions about education purposes, teaching, learning and evaluation. Various traditional and progressive theoretical perspectives will be discussed and opportunities provided to apply the principles of instructional design.

*Lectures, seminar, 3 hours per week.*  
Prerequisite: a course in cognitive or developmental psychology or one year of classroom teaching or an ECE diploma or permission of the instructor.

## Education

### EDUC 2F01

#### School learning

(also offered as CHST 2F01)

The psychological processes involved in learning in a school setting. Current cognitive theories of learning will be applied to examples in each of the major school subject areas with emphasis on the specific nature of the learning associated with each subject. Other topics may include: individual differences and problems in evaluating school learning.

*Lectures, seminar, 3 hours per week.*

Co-requisite: EDUC 1F90 or CHST 2F10 or PSYC 2F12 or 2F20.

### EDUC 3F01

#### The process of teaching

An introduction to the study of teacher behavior through a systematic exploration of the assumptions, educational purposes, teaching strategies, curricular designs and materials and the social and psychological theory underlying selected models of teaching. A critical examination of the alternate patterns upon which teachers may model their behavior. Students will be required to familiarize themselves with current educational concepts and recent literature in the field.

*Lectures, seminar, 3 hours per week.*

### EDUC 3P50

#### Focus on early childhood education, part I

(also offered as CHST 3P50)

Early childhood education programs for children from birth to age eight. Topics include: the historical and societal influences on early childhood education, an examination of program models derived from theories of learning and child development and research on the effectiveness of these programs.

*Lectures, seminar, 3 hours per week.*

Prerequisite: CHST 2F10.

Notes: Enrolment limited to 65 students. If necessary, further sections may be opened.

Credit will not be granted to students who have prior credit in EDUC(CHST) 3F50 or 3P51.

### EDUC 3P52

#### Focus on early childhood education, part II

(also offered as CHST 3P52)

Methods in early childhood education programs for children from birth to age eight. Topics include: a detailed examination of curricula, instructional strategies and evaluative techniques. Students will be involved in a field placement working with young children in a community setting.

*Lectures, lab/seminar, 4 hours per week.*

Prerequisite: EDUC 3P50.

Note: Enrolment limited to 25 students, to be determined by academic standing. Credit will not be granted to students who have prior credit in EDUC(CHST)3F50.

### EDUC 3F99

#### Advanced project in educational studies

Reading, writing and research skills relative to education. A qualifying research paper will be produced in one of several areas such as curriculum theory or design, teacher behavior or educational administration. The paper will be based on a critical examination of educational research accomplished through reviews of educational literature. Some emphasis will be placed upon presentation and discussion of the educational theory presented in the paper.

Restriction: Consult the department regarding permission to register.

Prerequisite: approval of the Department of Graduate and Undergraduate Studies in Education.

Note: Not available for undergraduate credit

Credit will not be granted to students who have prior credit in EDUC 495.

### EDUC 4P01

#### Mathematical and scientific learning and teaching

Childrens' mathematical and scientific thinking is examined in relation to developments in cognitive science, together with instructional strategies, materials and evaluation procedures. Topics include: developmental perspectives on childrens' scientific reasoning, general vs. domain-specific problem solving, the role of individual differences and learning styles, cognitive process evaluation methods, computer applications in math-

ematics and science instruction. A school-based practicum is required.

*Lectures, seminar, 3 hours per week.*

Prerequisite: admission to the BSc/BEEd program.

#### (Pre-service courses)

Courses designated EDUC8(alpha)00 or above are for students enrolled in the Program I BEEd. In addition to the required courses, students must select a minimum number of methods courses according to the level at which they seek certification.

### EDUC 8D09

#### Field studies, individualized instruction and practicum

Practical experience in observing and teaching in schools. These are integrated with courses, counselling groups and teaching centre activities (EDUC 8F08). Students will be guided in practice teaching for at least ten weeks distributed throughout the year. Successful completion of the in-school practice teaching is essential to this course.

*Lectures, seminar, 5 1/2 hours per week, plus practicum.*

Restriction: Open only to students admitted to Pre-service Education and Technological Studies Education programs and to BA/BEEd and BSc/BEEd majors with a minimum of 13.0 overall credits.

Note: Required.

### EDUC 8F08

#### Teaching techniques for the classroom

The components of the teaching act are identified and presented in a modular format. The student is guided through a series of specified tasks to practise and gain mastery in each of the required teaching skills. Taken in conjunction with EDUC 8D09.

*Lectures, seminar, 4 hours per week, plus practicum.*

Restrictions: Open only to students admitted to Pre-service Education and Technological Studies Education programs and to BA/BEEd and BSc/BEEd majors with a minimum of 13.0 overall credits.

Notes: Required. Credit will not be given for this course unless EDUC 8D09 is successfully completed.

## EDUC 8F09

**Instructional strategies - early primary**

For candidates focussing on early primary education. Methods developed specifically for early primary education are presented along with those for junior level. Topics presented in collaboration with practising early childhood teachers include play-based early childhood learning environments, literature-based theme planning, observation through child journals, emergent literacy. Teacher-led sessions on play-based learning.

*Four hours per week, plus practicum.*

Restriction: Open only to students admitted to Pre-service Education and to BA/BEEd majors. Consult the instructor regarding permission to register.

Notes: Required. Credit will not be given for this course unless EDUC 8D09 is successfully completed.

## EDUC 8F10

**Instructional strategies - intermediate/senior**

Planning and implementation, management, kinds and focuses of instructional approaches, curriculum development and delivery and current issues. Integrated with internship/practicum (EDUC 8D09), requiring close collaboration and interaction with students and teachers. Experience in the classroom observation, time management, self and peer evaluation and practical application of pedagogical theory. Independent projects, tutoring, reflection and journal writing.

*Four hours per week, plus practicum*

Restriction: Open only to students admitted to Pre-service Education (intermediate/senior). Consult the instructor regarding permission to register.

Co-requisite: EDUC 8D09.

Notes: Required. Credit will not be given for this course unless EDUC 8D09 is successfully completed.

## EDUC 8P00

**Design and technology**

An overview of technology and its application relative to product design, product development and production. It involves design and drafting as well as processing of materials such as wood, metals and plastics.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8P01

**Manufacturing technology**

An overview of the manufacturing industry, including product flow and patterns, problem-solving techniques, marketing strategies, as well as knowledge and practical skills in related technical fields. Areas of study include: design and computer-assisted drafting (CAD), machining, fabrication, metalworking and woodworking.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8P02

**Communication technology**

A study of communication industry, drawing on a student's technical skills and the knowledge required to produce effective communication products and services. Television, video recording, photography, print and graphic production and computer communication are examined.

*Two hours per week.*

## EDUC 8P03

**Construction technology**

A study of the construction industry, including design and planning, scheduling and operations, problem-solving techniques, as well as the practical skills and knowledge in related technical fields. Areas of study include: design and drafting (CAD), carpentry, metalworking, cabinetmaking, plumbing, heating, electrical work and landscaping.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8P06

**Classroom dynamics - teaching and learning**

Basic principles of child development and learning which guide the teacher in making decisions about classroom performance. Among the topics explored are: perception of self, motivation, conditioning, cognition, intelligence and creativity and general principles of hu-

man development and behavior modification. Modular approach with lecture, independent study, seminar simulations and guided classroom observations.

*Lectures, seminar, practicum, 2 hours per week.*

Restriction: Open only to students admitted to the Pre-service Education and Technological Studies Education programs and to BA/BEEd and BSc/BEEd majors with a minimum of 4.0 overall credits.

## EDUC 8P07

**Applied classroom dynamics**

Through analyses of classroom cases, students will apply understandings of child development, principles of learning and motivation, self-concept and student evaluation. In the context of teacher decision making, students identify and evaluate a range of effective teaching strategies, while exploring roles assumed by teachers within schools and in partnership with families.

*Two hours per week.*

Restriction: Open only to students admitted to primary/junior and junior/intermediate Pre-service Education programs.

Notes: In place of EDUC 8P06 for students with a background in psychology. Please consult the department prior to the first class.

## EDUC 8P08

**Instructional strategies - intermediate/senior: Waterloo-Brock French teaching specialization**

The planning and preparatory aspects of teaching, addressing the ongoing process of diagnosis as essential to such elements of instruction as motivation, classroom management and discipline within the expository discussion and inquiry models of teaching.

*Seminar, 4 hours per week.*

Restriction: Open only to students admitted to the Waterloo-Brock Education Program.

Note: Required.

Credit will not be granted to students with prior credit in EDUC 8F08.



## Education

EDUC 8P09

**Instructional strategies - intermediate/senior: Waterloo Brock French teaching specialization**  
Sequential to EDUC 8P08. Provides for reflection upon and application of experience in preceding practicum in areas of planning, management, methodological approaches, current social and educational issues and evaluation processes. Integrated workshops/seminars in context of continued practical experience in schools.

*Seminar, 4 hours per week.*

Restriction: Open only to students admitted to the Waterloo-Brock Education Program.

Co-requisite: EDUC 8D09.

Note: Required.

EDUC 8P28

**Special topics in junior/intermediate education**

Topics selected from year-to-year on the basis of specific areas of instructional expertise and candidate interest.

*Two hours per week.*

EDUC 8P30

**Primary/junior language arts and reading**

The objectives, structure and current approaches to the teaching of language and reading at the elementary level. Focus on the four components of communication: listening, speaking, reading and writing.

*Two hours per week.*

Restriction: Open only to students admitted to the primary/junior Pre-service Education Program and to BA/BEd majors with a minimum of 14.0 overall credits.

EDUC 8P38

**Special topics in primary/junior education**

Topics selected from year-to-year on the basis of specific areas of instructional expertise and candidate interest.

*Two hours per week.*

EDUC 8P65

**Marketing and merchandising - intermediate/senior**

Teaching methods and curriculum materials for marketing and other resources for information management courses in Ontario secondary schools.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education program.

Credit will not be granted to students who have prior credit in EDUC 8P71.

EDUC 8P66

**Information management - intermediate/senior**

Teaching methods and curriculum materials and other resources for information management courses in Ontario secondary schools.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

Credit will not be granted to students who have prior credit in EDUC 8P71.

EDUC 8P67

**Accounting - intermediate/senior**

Teaching methods and curriculum materials for accounting courses in secondary schools.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

Credit will not be granted to students who have prior credit in EDUC 8P71.

EDUC 8P68

**Data processing - intermediate/senior**

Teaching methods and curriculum materials for courses in data processing in the secondary schools.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

Credit will not be granted to students who have prior credit in EDUC 8P71.

EDUC 8P69

**Science (physics) - intermediate/senior**

Teaching physics in secondary schools; Ministry, board and school curriculum documents and other resources are examined.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

EDUC 8P70

**Intermediate basics**

Specific teaching and evaluation strategies appropriate to selected units of the grades 7 and 8 core curriculum. The principles and perspectives that underlie the curriculum guidelines of the intermediate division (grades 7-10) with emphasis on the transition years and on general and basic levels.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education and Technological Studies Education programs.

Note: Required.

EDUC 8P72

**Computer science - intermediate/senior**

Implementing computer science skills and methods of instruction in a secondary classroom; integrating use of the computer into any department; detailed look at computer science and technology.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

EDUC 8P73

**Theatre arts - intermediate/senior**

The purposes of a theatre program in schools and the practice of skills required for managing a theatre class. Some practical experience in theatre work or some formal training at the postsecondary level is required.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

EDUC 8P74

**English (first language) - intermediate/senior**

The development of teaching methodology and a personal philosophy of education through active participation and preparation of course material; may include research on the development of curricular units that deal with poetry, the short story, the novel, use and impact of the media.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

## EDUC 8P75

**Family studies - intermediate/senior**

The content, methodologies and resources for teaching grades 7-OAC in the areas of food and nutrition, clothing and textiles, management, the family and the child, housing.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

## EDUC 8P76

**French as a second language - intermediate/senior**

The theory of and approaches to teaching and learning a second language; the methodological approaches involved in teaching French as a second language at the intermediate and senior levels.

*Four hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

## EDUC 8P77

**Geography - intermediate/senior**

Development of a working knowledge of the skills, procedures and content involved in teaching geography at the secondary school level. Student participation is a major expectation.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

## EDUC 8P78

**International languages (German) - intermediate/senior**

The techniques of teaching German in grades 9-OAC; design, curriculum documents, lesson planning, evaluation of a student's work and the place of the language teacher in the school system.

*Two hours per week.*

## EDUC 8P80

**International languages (Italian) - intermediate/senior**

The theory of and approaches to teaching and learning a second language; the methodological approaches involved in teaching Italian at the intermediate and senior levels.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

## EDUC 8P81

**Mathematics - intermediate/senior**

Teaching techniques and curriculum materials in mathematics with some focus on teaching mathematics to general level students.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

## EDUC 8P82

**Physical and health education - intermediate/senior**

The philosophy of physical and health education in grades 7-OAC; limitations on the physical education program, management in the different learning areas, curriculum and teaching methods and use of audio-visual aids in health education.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

## EDUC 8P83

**Science - intermediate/senior**

Teaching science in the intermediate and senior division; Ministry, board and school curriculum documents and other resources are examined.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

## EDUC 8P84

**Visual arts - intermediate/senior**

Studio activity, skills and art forms appropriate for students in grades 7-OAC; course planning and teaching methods for group and individual activities in the classroom.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

Note: Experience or course work in studio art is a helpful background.

## EDUC 8P86

**Science (biology) - intermediate/senior**

Teaching biology in secondary schools; Ministry, board and school curriculum documents and other resources are examined.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

## EDUC 8P87

**Science (chemistry) - intermediate/senior**

Teaching chemistry in secondary schools; Ministry, board and school curriculum documents and other resources are examined.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

## EDUC 8P88

**History - intermediate/senior**

The nature of history in the secondary school program. Emphasis on development of history skills, curriculum design, analysis of subject guidelines from grade 7 - OAC.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

Credit will not be granted to students who have prior credit in EDUC 8P79.

## EDUC 8P89

**Political science - intermediate/senior**

The nature of political science in the secondary school program. Focus on development of skills in political science, curriculum design, analysis of subject guidelines for secondary school.

*Two hours per week.*

Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

Credit will not be granted to students who have prior credit in EDUC 8P79.

## EDUC 8P90

**International languages (Spanish) - intermediate/senior**

Theory of and approaches to second-language teaching and learning; a survey of some programs used in Ontario; sensitization to Hispanic culture and the Spanish-speaking world. Emphasis on methodological approaches to enable candidates to teach Spanish as a second language at the intermediate and senior levels.

*Two hours per week.*

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Restriction: Open only to students admitted to the intermediate/senior Pre-service Education Program.

### (Technology courses)

#### EDUC 8Q00

##### **Communications technology, basic**

An overview of the communication industry; the technical knowledge and skills required to explore such subjects as television and video production, art, broadcasting, photography, print and graphic production and computer communication.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q01

##### **Art, basic**

Fine art and vocational art, particularly in application to layout and design.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q02

##### **Computer electronics, basic**

Digital electronics; the investigation and application of digital subsystems associated with the microcomputer.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q03

##### **Drafting comprehensive, basic**

Overview of the conventional drafting and CAD (computer assisted drafting) and its application in support of the needs of communications technology.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q04

##### **Electronics, basic**

A balanced base of theoretical and practical studies relating to the various aspects of transmission and reception signals.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q05

##### **Graphic communications, basic**

The principles of printing, advertising, graphic art and design.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q06

##### **Music, basic**

Use of music as background, mood and supplement to audio and video productions as well as live stage performances.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q07

##### **Photography, basic**

The use of cameras and film, processing of film and making enlargements.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q10

##### **Communications technology, advanced**

An overview of the communication industry; the technical knowledge and skills required to explore such subjects as television and video production, art, broadcasting, photography, print and graphic production and computer communication.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q11

##### **Art, advanced**

Fine art and vocational art, particularly in application to layout and design. Set design and the artwork related to set construction and decoration.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q12

##### **Computer electronics, advanced**

Digital electronics; the investigation and application of digital subsystems associated with the microcomputer. Instruction at the OAC level.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q13

##### **Drafting comprehensive, advanced**

Overview of the conventional drafting and CAD (computer assisted drafting) and its application in support of the needs of communications technology. Includes set design and construction, design and fabrication of audio-visual systems and circuit design.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q14

##### **Electronics, advanced**

A balanced base of theoretical and practical studies in relation to the various aspects of transmission and reception of signals; identification of the design features and troubleshooting and making repairs to these systems and includes instruction at the OAC level.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q15

##### **Graphic communications, advanced**

The principles of printing, advertising, graphic art and design; offset plate making, lithography, bindery procedures, and all elements of Desktop Publishing (DTP).

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

#### EDUC 8Q16

##### **Music, advanced**

Use of music as background, mood and supplement to audio and video productions as well as live stage performances.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q17

**Photography, advanced**

The use of cameras and film, processing of film and making enlargements. The use of lighting procedures, composition and film finishing.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q20

**Construction technology, basic**

An overview of the construction industry; technical knowledge and skills including construction services, architectural design and drafting, electricity, environmental control, plumbing, sheet metal, trowel trades and woodworking.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q21

**Architectural drafting and design, basic**

Traditional as well as CAD techniques applied to building construction details, building materials and methods.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q22

**Construction services, basic**

A general overview of the various components, such as plans and specifications, construction fundamentals and procedures, industrial safety and building maintenance.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q23

**Electricity, basic**

Topics that are requirement for the installation of residential circuits in accordance with the Ontario Hydro Safety Code.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q24

**Environmental control, basic**

The essentials of heating, refrigeration and air conditioning.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q25

**Plumbing, basic**

The requirements for the installation, adjustment and the repair of simple plumbing systems; a positive attitude towards safety in the workplace.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q26

**Sheet metal, basic**

The essential elements of sheet metal fabrication; topics include: materials, measurement and layout, pattern development, hand processes and machine processes.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q27

**Trowel trades, basic**

The planning and construction of a masonry structure using standard practices with emphasis on competence and safety.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q28

**Woodworking, basic**

An overview of the building construction industry; knowledge and skill associated with the carpentry trade.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q30

**Construction technology, advanced**

An overview of the construction industry; technical knowledge and skills including construction services, architec-

tural design and drafting, electricity, environmental control, plumbing, sheet metal, trowel trades and woodworking.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q31

**Architectural drafting and design, advanced**

Traditional as well as CAD techniques applied to building construction details, building materials and methods; structural design and drafting and the history of architecture.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q32

**Construction services, advanced**

A general overview of the various components, such as plans and specifications, construction fundamentals and procedures, industrial safety and building maintenance.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q33

**Electricity, advanced**

Topics that are required for the installation of residential electrical circuits in accordance with the Ontario Hydro Safety Code.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q34

**Environmental control, advanced**

The essentials of heating, refrigeration and air conditioning; systems design and the installation of central and room air treatment devices.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

## EDUC 8Q35

**Plumbing, advanced**

The requirements for the installation,

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adjustment and the repair of simple plumbing systems; a positive attitude towards safety in the workplace.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q36

#### **Sheet metal, advanced**

The essential elements of sheet metal fabrication; topics include: materials, measurement and layout, pattern development, hand processes and machine processes.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q37

#### **Trowel trades, advanced**

The planning and construction of a masonry structure using standard practices with emphasis on competence and safety.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q38

#### **Woodworking, advanced**

An overview of the building construction industry; knowledge and skill associated with the carpentry trade; studies in cabinetmaking, millwork and pattern making.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q40

#### **Manufacturing technology, basic**

A broad overview of the manufacturing process; specific subject areas such as control systems, engineering drafting and design, foundry and moulding practice, industrial electronics, metal fabrication and precision machining.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q41

#### **Control systems, basic**

The basics in industrial control systems, such as hydraulics and pneumatics, instrumentation and principles of technology.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q42

#### **Engineering design and drafting, basic**

The use of both conventional and CAD methods of drawing.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q43

#### **Foundry and moulding practice, basic**

The study of the interrelationship of pattern making, foundry operations, casting processes and machine shop operations.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q44

#### **Industrial electrics, basic**

Knowledge and skills needed to investigate the sensing and controls of process parameters.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q45

#### **Metal fabrication, basic**

Light and heavy gauge sheet metal cutting and forming and the various methods of joining, such as fasteners and welding.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q46

#### **Precision machining, basic**

General machining and related information about the treatment and properties of

metals. Introduction to CNC machine technology; the role of precision machining in the overall manufacturing process.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q50

#### **Manufacturing technology, advanced**

Overview of the manufacturing process; specific subject areas, such as control systems, engineering drafting and design, foundry and moulding practice, industrial electronics, metal fabrication and precision machining.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q51

#### **Control systems, advanced**

The basics in industrial control systems, such as hydraulics and pneumatics, instrumentation and principles of technology. A variety of problem solving, troubleshooting and design experiences and includes instruction at the OAC level.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q52

#### **Engineering design and drafting, advanced**

The use of both conventional and CAD methods of drawing.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

### EDUC 8Q53

#### **Foundry and moulding practice, advanced**

The study of interrelationship of pattern making, foundry operations, casting processes and machine shop operations. Conventional as well as automated moulding and casting processes.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q54

**Industrial electrics, advanced**

Knowledge and skills needed to investigate the sensing and controls of process parameters. Electronic (analog) circuits, digital electronics and the electronic control of processes.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q55

**Metal fabrication, advanced**

Light and heavy gauge sheet metal cutting and forming and the various methods of joining, such as fasteners and welding.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q56

**Precision machining, advanced**

General machining and related information about the treatment and properties of metals. Introduction to CNC machine technology; the role of precision machining in the overall manufacturing process.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q60

**Transportation technology, basic**

Overview of the entire field of transportation. Motive power and its application to mobile vehicles, including automobiles, aircraft, farm equipment and small engines.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q61

**Agricultural equipment, basic**

Skill and knowledge required to investigate and analyse the entire range of farm equipment.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q62

**Aircraft, basic**

A general overview of aviation.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q63

**Auto body, basic**

The knowledge and skills required to effect minor and major repairs, fitting and alignment and finishing techniques. Information related to paints, spray equipment and paint application.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q64

**Automotive, basic**

An overview of the automobile purpose, location and operation of the principal components of a modern automobile with emphasis on the electronics and the diagnostic equipment and techniques required for replacement or repairs.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q65

**Small powered equipment, basic**

The general knowledge and skills required to service small engines and devices.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q70

**Transportation technology, advanced**

Overview of the entire field of transportation. Motive power and its application to mobile vehicles, including automobiles, aircraft, farm equipment and small engines.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q71

**Agricultural equipment, advanced**

Skill and knowledge required to investi-

gate and analyse the entire range of farm equipment. The maintenance and service of all forms of farm vehicles, such as trucks, tractors, harvesting equipment and production equipment.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q72

**Aircraft, advanced**

A general overview of aviation. The advanced level will include the study of aero engines and airframes, electricity and electronics, aerodynamics and flight theory.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q73

**Auto body, advanced**

The knowledge and skills required to effect minor and major repairs, fitting and alignment and finishing techniques. Information related to paints, spray equipment and paint application.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q74

**Automotive, advanced**

An overview of the automobile: purpose, location and operation of the principal components of a modern automobile, with emphasis on the electronics and the diagnostic equipment and techniques required for replacement or repairs.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

EDUC 8Q75

**Small powered equipment, advanced**

The general knowledge and skills required to service small engines and devices.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

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### EDUC 8Q98

#### **Design and technology** (formerly Industrial arts)

A review of technology and its application relative to product design, product development and production. Topics include: electricity, comprehensive drafting, design and drafting and processing of materials such as wood, metals and plastics.

*Two hours per week.*

Restriction: Open only to students admitted to the Technological Education Program.

(Pre-service courses)

### EDUC 8Y04

#### **Current trends and issues in special education**

Current legislation and recent developments related to the education of exceptional students.

*Lectures, seminar, practicum, 2 hours per week.*

Restriction: Open only to students admitted to the BSc/BEEd, Pre-service Education and Technological Studies Education programs and to BA/BEEd majors with a minimum of 4.0 overall credits.

Note: Required.

### EDUC 8Y05

#### **The education enterprise**

An analysis of contemporary theories, issues and innovations in education. Investigation of the relationship between philosophical principles and the aims of education evidenced in selected educational systems. Study of the acts and regulations regarding education.

Required.

*Lectures, seminar, practicum, 2 hours per week.*

Restriction: Open only to students admitted to the BSc/BEEd, Pre-service Education and Technological Studies Education programs and to BA/BEEd majors with a minimum of 4.0 overall credits.

Note: Required.

### EDUC 8Y20

#### **Junior/intermediate language arts**

An integrative approach to spoken and written language in the classroom. Various methodologies are examined in relation to current Ministry guidelines and

changing views of language teaching.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the junior/intermediate Pre-service Education Program and to BSc/BEEd majors with a minimum of 13.0 overall credits.

### EDUC 8Y21

#### **Junior/intermediate mathematics**

Teaching mathematics at the junior and intermediate levels; looking at materials, games, individualized programs and workshop methods of teaching mathematics.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the junior/intermediate Pre-service Education Program and to BSc/BEEd majors with a minimum of 9.0 overall credits.

### EDUC 8Y22

#### **Junior/intermediate social studies**

Objectives, format, structure, strategies and evaluation of social studies in the junior and intermediate divisions stressing teaching techniques for social studies courses.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the junior/intermediate Pre-service Education Program and to BSc/BEEd majors with a minimum of 13.0 overall credits.

### EDUC 8Y23

#### **Junior/intermediate science**

A practical approach to recent theories in science education, to instruction procedures and handling of science materials in the classroom, laboratory and the field. Interpretation of the Ontario science curriculum.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the junior/intermediate Pre-service Education Program and to BSc/BEEd majors with a minimum of 9.0 overall credits.

### EDUC 8Y24

#### **Junior/intermediate art**

Planning and instructing in grades 4 - 10 with emphasis on art as a school discipline; the teacher's role in meeting the needs of the pre-adolescent. No visual arts background is required.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the junior/intermediate Pre-service Education Program and to BSc/BEEd majors with a minimum of 13.0 overall credits.

### EDUC 8Y25

#### **Junior/intermediate music**

Basic musicology for grades 4-8. No academic background in music is required. Emphasis placed on grades 4 - 6.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the junior/intermediate Pre-service Education Program and to BSc/BEEd majors with a minimum of 13.0 overall credits.

### EDUC 8Y26

#### **Junior/intermediate physical education**

Physical education for grades 4-10; setting up programs, planning and organizing lessons, gymnasium procedures, encouraging participation, evaluation procedures.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the junior/intermediate Pre-service Education Program and to BSc/BEEd majors with a minimum of 13.0 overall credits.

### EDUC 8Y27

#### **Junior/intermediate reading**

The development of reading in middle childhood and its relationship to language. Teaching techniques, curriculum guidelines, comprehension and diagnosis and remediation of reading difficulties.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the junior/intermediate Pre-service Education Program and to BSc/BEEd majors with a minimum of 13.0 overall credits.

### EDUC 8Y31

#### **Primary/junior mathematics**

The ways in which a child learns mathematics and the uses of mathematics for today's child, grades 1-6.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the primary/junior Pre-service

Education Program and to BA/BEd majors with a minimum of 14.0 overall credits.

EDUC 8Y32

**Primary/junior social and environmental studies**

An active, inquiry approach to the teaching of social and environmental studies in grades K - 6 as indicated in the Ministry's curriculum guidelines.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the primary/junior Pre-service Education Program and to BA/BEd majors with a minimum of 14.0 overall credits.

EDUC 8Y34

**Primary/junior art**

Planning and instructing at the primary/junior level; studio skills and art forms appropriate for school use; the teacher's role in meeting the needs and capabilities of the young child as artist. No visual arts background is required.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the primary/junior Pre-service Education Program and to BA/BEd majors with a minimum of 9.0 overall credits.

EDUC 8Y35

**Primary/junior music**

The music program at the primary/junior levels; designed primarily for students with no academic background in music to prepare them to teach music in their own classrooms (K-6).

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the primary/junior Pre-service Education Program and to BA/BEd majors with a minimum of 9.0 overall credits.

EDUC 8Y36

**Primary/junior physical education**

Ways of teaching and organizing physical education activities for grades 1-6 pupils in accordance with Ministry and board curriculum guides.

*Two hours alternate weeks.*

Restriction: Open only to students admitted to the primary/junior Pre-service Education Program and to BA/BEd majors with a minimum of 9.0 overall credits.

**(In-service courses)**

Courses numbered 9(alpha)00 or above are for students in the Program II BEd. Five credits are required, three of which must be in a specialized series.

EDUC 9F01

**Adult education**

The needs and characteristics of adult learners and the social systems established to assist them. Preparing learning materials, planning, implementing and evaluating programs; consulting and communicating effectively with adult learners.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: Ontario Teacher's Certificate.

Credit will not be granted to students who have prior credit in EDUC 494.

EDUC 9F02

**Assessment of teaching performance**

Counselling, supervision and evaluation of student teacher performance. The practicum component allows associate teachers to work with student teachers enrolled in the Pre-service program at the Faculty of Education.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

Credit will not be granted to students who have prior credit in EDUC 470.

EDUC 9F03

**Childhood education**

Evaluation of the child aged four to six, six to eight or four to eight. Topics include: characteristics of developmental stages, appropriate learning environments, curriculum and evaluation techniques; additional topics include multicultural education, sex role stereotyping, early identification of special learning problems, child abuse and community school relations.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

Credit will not be granted to students who have prior credit in EDUC 432.

EDUC 9F04

**Integrated arts**

The contribution of the arts towards a

balanced school program in the primary and junior grades. The development of curriculum and teaching strategies that foster awareness and appreciation of the arts (drama, music, physical education and visual arts) individually and collectively.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

Credit will not be granted to students who have prior credit in EDUC 457.

EDUC 9F05

**Law education**

Designed to assist teachers who are either currently teaching or who plan to teach the subjects: law intermediate/senior division, business law or Canadian and world concerns courses. An examination of the content organization and teaching methodology for the study of law at the secondary school level.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to teachers and administrators.

EDUC 9F07

**Teaching Mohawk/Cayuga**

Teaching Mohawk and/or Cayuga as an ancestral language for the purposes of retention and maintenance; the collection of language samples and preparation of teaching aids.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers with proficiency in either language adequate for teaching at a beginning level.

EDUC 9F08

**Teaching writing**

A study of appropriate Ministry documents and of current thinking and research related to the teaching of writing. Development of understanding of the writing process and its implications for teaching writing in the classroom. An examination of responses to students' writing at a variety of stages and for a variety of purposes.

*Lecture, seminar, 3 hours per week.*

EDUC 9F11

**Teaching French as a second language, part I**

Teaching French as a second language as



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outlined in the Ministry's curriculum guidelines for the primary, junior and intermediate divisions; the aims of the French program in Ontario schools; methodology; an introduction to linguistics; audio-visual devices; demonstration classes and practice teaching.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers as well as other interested qualified individuals who qualify by successful completion of an oral and written test.

### EDUC 9F12

#### Teaching French as a second language, part II

Teaching French as a second language in core and immersion programs at the primary, junior and intermediate levels. Classes and assignments will include studies of Ministry guidelines, language development, curriculum and unit development, language materials and visits to immersion classes.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F11.

### EDUC 9F13

#### Teaching French as a second language, part III

Advanced techniques for programs at the primary, junior and intermediate divisions in teaching French as a second language. Studies will be made of leadership skills and styles, program organization, professional development and sequencing of programs.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F12 and a transcript showing at least five credits in French at the university level.

### EDUC 9F14

#### Music (vocal) primary/junior, part I

Concepts of music including: singing, listening, reading, playing, creating, moving and dramatizing; the Tonic Solfa method. Concentration will be at the primary level.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers as well as other interested qualified individuals who qualify by successful completion of an oral and written test.

### EDUC 9F15

#### Music (vocal) primary/junior, part II

Teaching strategies and materials required for a well-balanced classroom music program. Planning a one-year curriculum that provides for continuity in the development of musical skills and the understanding of concepts. Concentration will be at the junior level.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F14.

### EDUC 9F16

#### Music (vocal) primary/junior, part III

The organization and administration of music programs in a variety of school settings in the primary and junior divisions; curriculum building, the selection of materials and resources, choral repertoire and vocal techniques for performance. Contemporary approaches to music education will be examined and compared.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F15.

### EDUC 9F17

#### Science education primary/junior, part I

An introduction to the teaching of science in the primary and junior divisions based on Ministry of Education curriculum guidelines. The development of teaching models, programs, materials and their evaluation.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

### EDUC 9F18

#### Science education primary/junior, part II

A continuation of EDUC 9F17. Planning programs in primary/junior science with emphasis on implementing learning strategies; evaluating the science component of a balanced and integrated program at the primary/junior division level.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F17.

### EDUC 9F19

#### Science education primary/junior, part III

The study of leadership skills in the or-

ganization, administration and supervision of science education program for the primary/junior division.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F18.

### EDUC 9F21

#### Reading, part I

An introduction to the language processes of reading and writing. Basic assessment procedures and the improvement of reading skills.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

### EDUC 9F22

#### Reading, part II

A more detailed study of the components involved in the reading act and the techniques used in the diagnosis and remediation of reading problems.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F21.

### EDUC 9F23

#### Reading, part III

Advanced instruction in the theory and practice of reading instruction; the design and implementation of reading programs.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F22.

### EDUC 9F24

#### Design and technology, part I

Laboratory-centred activity on material and processes; an analysis of curriculum theory as it applies to industrial arts programs. Topics include safety, drafting and sketching, wood and plaster fabrication, metal fabrication, and applied design.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers or permission of the department chair. Candidates will be required to pass the Manufacturing Area, Trade Test B.

### EDUC 9F25

#### Design and technology, part II

Laboratory-centred activity focusing on the processes of project design and curriculum development in order to produce

units of study for various types of courses in industrial arts.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F24.

EDUC 9F26

**Design and technology, part III**

Organization and curriculum development as they apply to the industrial arts program, to the school and to the local and provincial system.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F25.

EDUC 9F27

**Teacher-librarianship, part I**

The role of school librarian in the teaching program of the school; organizing resource materials, operating A/V equipment, selecting suitable reference and resource materials; providing instruction and guidance to students on the selection of appropriate materials for research, recreational and informational needs.

*Lecture, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

EDUC 9F28

**Teacher-librarianship, part II**

A continuation of EDUC 9F27.

Foundations for management of library programs; instruction and guidance in interpreting and utilizing aural and visual media. The selection organization, circulation and utilization of picture books, government publications, newspapers and pamphlets as well as film and text.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F27.

EDUC 9F29

**Teacher-librarianship, part III**

The development of strategies organizations and programs using community and other resources beyond the school. Curriculum design principles and selection policies for a school library. Design and evaluation of library programs and facilities.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F28.

EDUC 9F31

**Environmental science, part I**

The development and implementation of courses of study and learning experiences in environmental science within the community, neighborhood and outdoor areas to which a school has access.

*Lectures, seminar, practicum, 3 hours per week.*

Credit will not be granted to students who have prior credit in EDUC 471.

Note: Open to certified teachers.

EDUC 9F32

**Environmental science, part II**

A continuation of EDUC 9F31.

Planning programs of environmental science (outdoor education) in a K to OAC continuum with emphasis on implementation at the three divisional levels.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F31.

EDUC 9F33

**Environmental science, part III**

The organization, administration and supervision of environmental science programs; their design, development and implementation in elementary and secondary schools.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F32.

EDUC 9F34

**Family studies, part I**

An introduction to family studies based on Ministry of Education curriculum guidelines. Topics will include: social trends affecting individuals and families, curriculum trends and concept development, examining and organizing programs in family studies at the elementary/secondary levels and the place of family studies in the total school curriculum.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

EDUC 9F35

**Family studies, part II**

A continuation of EDUC 9F34.

The foundations and development of family studies programs; the selection and utilization of suitable reference and resource materials from the community

for the preparation and teaching of units of study in family studies.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F34 and at least three university credits in any of the related areas (child and family development, management and consumer economics, housing and interior design, clothing and textiles, foods and nutrition).

EDUC 9F36

**Family studies, part III**

Strategies organization and programs in family studies using school and community resources with attention to designing, implementing and evaluating family studies programs.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisites: EDUC 9F35 and a minimum of five university credits from the five areas outlined in EDUC 9F35.

EDUC 9F37

**Primary education, part I**

Basic teaching strategies with emphasis on communication (language arts and mathematics); a consideration of curriculum matters of concern to primary teachers in these subject areas; and an examination of Ministry documents and theories of child development as they relate to communications.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified primary grade teachers.

EDUC 9F38

**Primary education, part II**

Basic teaching strategies with emphasis on social and environmental sciences and the arts (drama, music, visual arts and physical and health education); a consideration of curriculum matters. Ministry documents and current principles of child development and learning as they relate to these subject areas.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F37.

EDUC 9F39

**Primary education, part III**

A more intensive consideration of the teaching strategies, evaluation tech-

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niques and curriculum concerns examined in EDUC 9F37 and 9F38; the leadership skills involved in the professional development of teachers; principles of curriculum construction; the diagnosis and remediation of learning difficulties; the examination of relevant case studies and the pursuit of individual interests.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F38.

### EDUC 9F41

#### **Physical and health education primary/junior, part I**

Activities and practices for teachers of the primary/junior grades, with attention to current theory and philosophy. The primary program and motor skills development; creative movement in dance and gymnastics; folk dance; health education and organizational procedures. Intramural activities, planned by students and faculty.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

### EDUC 9F42

#### **Physical and health education primary/junior, part II**

Fitness and activity sessions for children at the junior level including: movement education in dance and gymnastics, folk dance orienteering and health. Intramural activities.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F41.

### EDUC 9F43

#### **Physical and health education primary/junior, part III**

Program content and development; current problems, both personal and programmatic and the development of leadership skills.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F42.

### EDUC 9F44

#### **Physical and health education intermediate/senior, part I**

Activities and philosophies related to current practices at the intermediate level; program development in dance,

gymnastics, games; anatomy and athletic injuries; individual games activities suitable for these age levels. Intramural activities.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

### EDUC 9F45

#### **Physical and health education intermediate/senior, part II**

Activities and philosophies related to the senior division; program development; teaching strategies in dance, gymnastics and games, appropriate health topics and the organization of suitable programs for the involvement of students at this level. Intramural sessions.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F44.

### EDUC 9F46

#### **Physical and health education intermediate/senior, part III**

Advanced instruction in the organization and administration of physical and health education programs at the intermediate and senior levels. Curriculum development, teaching strategies, evaluation techniques, leadership and supervision.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F45.

### EDUC 9F47

#### **Attendance counsellor**

Important aspects of the attendance counsellor training program as defined by the Ministry of Education guidelines including: philosophy of attendance counsellor training; change agent theory and practice; counselling theory and practice; developmental psychology; law and education.

*Lectures, seminar, practicum, 3 hours per week.*

Notes: Open to potential attendance counsellor candidates, practicing attendance counsellors, certified teachers, social workers, BEd candidates (limited enrolment). The program requirements may be met through the successful completion of a combination of compulsory and elective courses. The following patterns reflect the combination of courses necessary to meet Ministry certification requirements.

Credit will not be granted to students who have prior credit in EDUC 482.

### EDUC 9F51

#### **Visual arts, part I**

The scope of visual arts in general education at the elementary and secondary school levels; methodologies related to development in personal expression, awareness, appreciation, knowledge, perception and skills in art, craft and design. The relationship of these methodologies to the total school experience of the student.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

### EDUC 9F52

#### **Visual arts, part II**

Planning art programs for a divisional level. Topics will include studio workshops in media processes and design, methods of exhibition and art appreciation.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisites: EDUC 9F51.

### EDUC 9F53

#### **Visual arts, part III**

Curriculum design and implementation; leadership skills in managing a visual arts department, planning and conducting advanced level workshops in visual arts and evaluating visual arts programs.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F52.

### EDUC 9F54

#### **Religious education, part I**

An introductory course designed by OECTA/OSSTA, leading to an elementary certificate in religious education. Under the guidance of leaders who are both teachers and theologians, participants are invited to explore the many aspects of Catholic Christianity.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers. Names of candidates who successfully complete EDUC 9F54 will be recommended to OECTA for credit towards an additional qualification in Religious education, part I.

## EDUC 9F55

**Religious education, part II**

A continuation of EDUC 9F54.

Detailed and specific studies leading to an intermediate certificate in religious education. A concentration on the experience and communication of sacred revelation as celebrated in the tradition of faith and behavior of the Roman Catholic church.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F54.

Note: Names of candidates who successfully complete EDUC 9F55 will be recommended to OECTA for credit towards an additional qualification in Religious education, part II.

## EDUC 9F56

**Religious education, part III**

The development of leadership in teaching strategies, curriculum and organization of religious education programs using school and community resources. Designing, implementing and evaluating religious education programs and workshops in the Roman Catholic school system.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F55.

Note: Names of candidates who successfully complete EDUC 9F56 will be recommended to OECTA for credit towards an additional qualification in Religious education, part III.

## EDUC 9F57

**Junior education, part I**

Curriculum matters of concern to junior teachers; an examination of basic teaching strategies in the various subject areas and the development of skills associated with a recognized system of interpersonal relationships.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified junior grade teachers or those with credit in EDUC 9F77.

Credit will not be granted to students who have prior credit in EDUC 458.

## EDUC 9F58

**Junior education, part II**

An overview of current principles of child development and learning; a more

detailed examination of curricula and a finer analysis of techniques of instruction and evaluation in one specific area of the curriculum (communications, environmental studies or arts).

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F57.

Credit will not be granted to students who have prior credit in EDUC 459.

## EDUC 9F59

**Junior education, part III**

A more intensive consideration of the teaching strategies, evaluation techniques and curricular concerns examined in EDUC 9F57 and 9F58 with a focus on the leadership skills involved in the professional development of teachers, the principles of curriculum construction and the diagnosis and remediation of learning difficulties.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F58.

Credit will not be granted to students who have prior credit in EDUC 460.

## EDUC 9F61

**Computers in the classroom, part I**

An introduction to the microcomputer and its educational application for the classroom teacher; the architectural, historical and pedagogical aspects of microcomputers; basic computer literacy; elementary program development; students will select, review, modify and field test educational computer courseware.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

Credit will not be granted to students who have prior credit in EDUC 473hc, 474hc.

## EDUC 9F62

**Computers in the classroom, part II**

A continuation of EDUC 9F61.

Further development of computer literacy and programming skills; instruction and practice in designing and evaluating courseware and networking. The major project will involve self-designed courseware.

*24 3-hour lab sessions.*

Prerequisite: EDUC 9F61.

## EDUC 9F63

**Computers in the classroom, part III**

More advanced techniques in the evaluation, design and production of computer-aided learning materials. Instruction and practice in advanced programming, troubleshooting and systems design. The major project will involve a systems design.

*24 3-hour lab sessions.*

Prerequisite: EDUC 9F62.

## EDUC 9F64

**Guidance, part I**

An introduction to guidance based on Ministry of Education curriculum guidelines; guidance for human development; interpersonal skills and human relations; counselling theories and approaches; group techniques and the information process.

*Lectures, seminar, practicum, 3 hours per week.*

Open to certified teachers.

## EDUC 9F65

**Guidance, part II**

A continuation of EDUC 9F64. Effective utilization of group processes; the importance of career and educational planning; counselling techniques.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F64.

## EDUC 9F66

**Guidance, part III**

Development of strategies organization and programs in guidance using school and community resources. Curriculum development and planning; marketing, co-ordinating and evaluating guidance services; advanced counselling practicum and business-industry-education practicum.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F65.

## EDUC 9F67

**English as a second language, part I**

An introduction to the study of English as a second language. Concerns and implications faced by students adapting to Canadian society; techniques and theories of teaching and learning as applied to second-language acquisition and a study of available teaching/learning materials.

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*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers. Applicants must be able to communicate well in both written and spoken English.

### EDUC 9F68

#### **English as a second language, part II**

A continuation of EDUC 9F67. Further development of instructional units in ESL; the evaluation of ESL programs and learning materials.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F67.

### EDUC 9F69

#### **English as a second language, part III**

Development of strategies organization and programs in ESL using school and community resources; the design, implementation and evaluation of effective ESL programs.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F68.

### EDUC 9F71

#### **Co-operative education, part I**

An analysis of a variety of co-operative education programs currently being used in the schools of Ontario. Students will plan, implement, supervise and evaluate a co-operative education course at the classroom level with reference to Ministry of Education documents (OSIS--Ontario Schools Intermediate and Senior division programs).

*Lectures, seminar, practicum.*

Note: Open to certified teachers.

Credit will not be granted to students who have prior credit in EDUC 472.

### EDUC 9F72

#### **Co-operative education, part II**

The development, implementation and evaluation of co-operative education programs at the department and school-wide level; social and vocational needs, values and programs; community and work-site reactions to the concept of co-operative education.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F71.

Credit will not be granted to students who have prior credit in EDUC 475.

### EDUC 9F73

#### **Co-operative education, part III**

Organizing and leading workshops in co-operative education; planning, coordinating and implementing co-operative education programs (including in-school and out-of-school components) at the school and board level.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F72.

Credit will not be granted to students who have prior credit in EDUC 476.

### EDUC 9F74

#### **Dramatic arts, part I**

Basic methodologies in teaching dramatic arts in Ontario schools. Consideration will be given to the preparation of an introductory course in dramatic arts and appropriate methods of student evaluation.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to all teachers.

### EDUC 9F75

#### **Dramatic arts, part II**

A continuation of the study of the components introduced in EDUC 9F74. More advanced consideration of the preparation and evaluation of courses in dramatic arts.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F74.

### EDUC 9F76

#### **Dramatic arts, part III**

Organizing and teaching workshops in dramatic arts: planning, implementing and evaluating dramatic arts programs.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F75.

### EDUC 9F77

#### **Curriculum and instruction in the junior division**

For teachers who are seeking qualification in an additional area of concentration in the junior division (Ontario Teacher's Qualifications Reg. 407/78, Section 26 and 27). Basic teaching strategies in all subject areas taught at the junior level. Current principles of child development and learning and curriculum at the junior level.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: an undergraduate degree and an Ontario Teacher's Certificate.

### EDUC 9F78

#### **Primary basic curriculum and instruction**

For teachers who are seeking qualification in an additional area of concentration in the primary division (Ontario Teacher's Qualifications Reg. 407/78, Section 26, 27). Basic teaching strategies in all subject areas taught at the primary level. Current principles of child development and learning and curriculum at the primary level.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: an undergraduate degree and an Ontario Teacher's Certificate.

### EDUC 9F81

#### **Multiculturalism in education, part I**

The scope of multicultural education at elementary and secondary school levels; its implications for the total learning environment and the cultural dynamics of school-community relations. Objectives: development of a course at the secondary school level or a unit in an elementary program or a school program based on the concept of multicultural education.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

### EDUC 9F82

#### **Multiculturalism in education, part II**

A continuation of the consideration of the history of racial and ethnic issues in Canada and the theories of cross-cultural and inter-cultural communication and their application in the school setting. The analysis and assessment of results of a multicultural curriculum or program. Practical experience involving an ethnic group or institution.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F81.

### EDUC 9F83

#### **Multiculturalism in education, part III**

Advanced consideration of the factors relating to a multicultural society and the

significant resources in a specific area of concentration (e.g., curriculum, counseling, assessment and placement, communication). Advanced practical experience in the field of multicultural education.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F82.

#### EDUC 9F84

##### **Mathematics primary/junior, part I**

A study of Ministry of Education policies, support documents and resources related to mathematics at the primary and junior divisions. An overview of developmental and learning theories as they apply to the teaching strategies for mathematics including learning processes organization, motivation and concept development. An examination of mathematics in other subject areas and in practical applications.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

#### EDUC 9F85

##### **Mathematics primary/junior, part II**

A more detailed examination of Ministry policies and resources related to mathematics at the primary and junior divisions. A study of various assessment strategies and an introduction to diagnostic techniques and remedial procedures. An examination of the technology related to the teaching of mathematics at the primary and junior divisions.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F84

#### EDUC 9F86

##### **Mathematics primary/junior, part III**

A focus on additional teaching strategies so as to review, develop and implement changes in the mathematics curriculum at the primary and junior divisions. A more intensive examination of assessment strategies for student achievement and of diagnostic techniques and programming for students with special needs. An opportunity to review the research and current issues related to the teaching of mathematics at the primary and junior divisions.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F85.

#### EDUC 9F87

##### **Intermediate education, part I**

Current principles of adolescent development and learning; resource materials available to intermediate teachers; basic teaching strategies appropriate to the intermediate division. The various modes of communication, consultation and cooperative action in the development of curricula.

*Lecture, seminar, practicum, 3 hours per week.*

Note: Open only to certified intermediate grade teachers.

#### EDUC 9F88

##### **Intermediate education, part II**

Detailed examination of various theories of adolescent growth and development; curriculum design principles, teaching strategies and effective learning materials appropriate to the intermediate division; evaluation techniques and counseling procedures used at this grade level.

*Lecture, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F87.

#### EDUC 9F89

##### **Intermediate education, part III**

Alternate patterns of teaching strategies, evaluation techniques and curricular concerns examined in EDUC 9F87 and 9F88 with the focus on adolescent exceptionalty, career awareness and social adjustment. Instruction and practice in leadership skills which enhance effective communication with students, parents, colleagues and administrators.

*Lecture, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F88.

#### EDUC 9F91

##### **Entrepreneurship studies, part I**

Familiarity with the subject matter and relevant teaching materials for the major concepts of the Ministry of Entrepreneurship Curriculum Guide and awareness of available community resources. Practice in the development and implementation of an entrepreneurial plan.

*Lectures, seminar, practicum, 3 hours per week.*

Credit will not be granted to students with prior credit in EDUC 9F06.

#### EDUC 9F92

##### **Entrepreneurship studies, part II**

Practice in the development and improvement of course outlines and curriculum support materials for a variety of target groups and purposes. Familiarity with participative student-centered teaching styles and the development of methodologies for teaching relevant enterprise skills and of processes for acquiring motivation and commitment to these skills.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F91.

#### EDUC 9F93

##### **Entrepreneurship studies, part III**

Development of skills in constructing curriculum units, components and themes for the study of entrepreneurship at the basic, general and advanced level of the secondary school. Practice in leadership roles in sourcing and adapting information and resource materials. Advanced study of entrepreneurship literature and research as well as the role of entrepreneurship in the economy.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9F92.

*Note: The following prerequisite is required for all EDUC 9G00-9G89 courses.*

An Ontario Teacher's Qualifications Record Card or Temporary Letter of Standing indicating initial qualifications at the intermediate and senior divisions in Technological Studies. For applicants whose Ontario Teacher's Qualifications Record Card or Temporary Letter of Standing does not indicate intermediate and senior divisions in Technological Studies, evidence of at least 5 years of wage-earning experience related to the subject for which qualification is sought. (Pertinent education can substitute for some wage-earning experience.)

#### EDUC 9G00

##### **Communications technology, basic**

An overview of the communication industry; the technical knowledge and skills required to teach such subjects as television and video production, art, broadcasting, photography, print and

## Education

graphic production and computer communication.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G01

#### **Art, basic**

Strategies required to teach fine art and vocational art, particularly in application to layout and design.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G02

#### **Computer electronics, basic**

Basic strategies for teaching digital electronics. The investigation and application of digital subsystems associated with the microcomputer.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G03

#### **Drafting comprehensive, basic**

Strategies in teaching conventional drafting and CAD (computer assisted drafting) and their application in support of the needs of communications technology.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G04

#### **Electronics, basic**

Methodologies required to teach a balanced base of theoretical and practical studies relating to the various aspects of transmission and reception of signals.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G05

#### **Graphic communications, basic**

Strategies required to teach the principles of printing, advertising, graphic art and design.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G06

#### **Music, basic**

Teaching strategies for the use of music as background, mood and supplement to audio and video productions as well as live stage performances.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G07

#### **Photography, basic**

Teaching strategies for the use of cameras and film, processing of film and making enlargements.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G20

#### **Construction technology, basic**

An overview of the construction industry; technical knowledge, and skills and teaching strategies for the construction services, architectural design and drafting, electricity, environmental control, plumbing, sheet metal, trowel trades and woodworking.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G21

#### **Architectural drafting and design, basic**

Methodologies required to teach traditional and computer assisted drafting techniques applied to building construction details and building supplies.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G22

#### **Construction services, basic**

Strategies for teaching a general overview of the various components, such as plans and specifications, construction fundamentals and procedures, industrial safety and building maintenance.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G23

#### **Electricity, basic**

Teaching strategies required for the installation of residential electrical circuits in accordance with the Ontario Hydro Safety Code.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G24

#### **Environmental control, basic**

Methodologies required to teach the essentials of heating, refrigeration and air conditioning  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G25

#### **Plumbing, basic**

Teaching strategies emphasizing the requirements for the installation, adjustment and the repair of simple plumbing systems; a positive attitude towards safety in the workplace.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G26

#### **Sheet metal, basic**

Strategies required to teach the essential elements of sheet metal fabrication. Topics include: materials, measurement and

layout, pattern development, hand processes and machine processes.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G27

#### **Trowel trades, basic**

Strategies for teaching the planning and construction of a masonry structure using standard practices with emphasis on competence and safety.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G28

#### **Woodworking, basic**

An overview of the building construction industry: knowledge, skill and teaching strategies associated with the carpentry trade.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G40

#### **Manufacturing technology, basic**

A broad overview of the manufacturing process. Strategies for teaching specific subject areas such as control systems, engineering drafting and design, foundry and moulding practice, industrial electronics, metal fabrication and precision machining.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G41

#### **Control systems, basic**

Strategies for teaching the basics in industrial control systems, such as hydraulics and pneumatics, instrumentation and principles of technology.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G42

**Engineering design and drafting, basic**  
Strategies for teaching the use of both conventional computer assisted drafting and methods of drawing.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G43

**Foundry and moulding practice, basic**  
Strategies required to teach the interrelationship of pattern making, foundry operations, casting processes and machine shop operations.  
*Lectures, seminar, lab, 3 hours per week.*

### EDUC 9G44

#### **Industrial electrics, basic**

Knowledge, skills and teaching strategies needed to investigate the sensing and

controls of process parameters.  
*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G45

**Metal fabrication, basic**

Strategies for teaching cutting and forming of light and heavy gauge sheet metal and the various methods of joining, such as fasteners and welding.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G46

**Precision machining, basic**

General machining and related information about the treatment and properties of metals. Introduction to CNC machine technology. Teaching strategies illustrating the role of precision machining in the overall manufacturing process.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G60

**Transportation technology, basic**

Overview of the entire field of transportation. Strategies for teaching motive power and its application to mobile vehicles, including automobiles, aircraft, farm equipment and small engines.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G61

**Agricultural equipment, basic**

Knowledge, skill and teaching strategies required to investigate, analyse the entire range of farm equipment.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G62

**Aircraft, basic**

Teaching strategies required to give an overview of aviation.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G63

**Auto body, basic**

The knowledge, skills and teaching strategies required to effect minor and major repairs, fitting and alignment and finishing techniques. Information related to paints, spray equipment and paint application.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G64

**Automotive, basic**

Teaching strategies to give an overview of the automobile: purpose, location and operation of the principal components of

a modern automobile with emphasis on the electronics and the diagnostic equipment and techniques required for replacement or repairs.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G65

**Small powered equipment, basic**

The general knowledge, skills and teaching strategies required to service small engines and devices.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G80

**Services technology, basic**

An overview of the services field. Teaching strategies required for the planning, operation and development of services and technologies in hospitality, home maintenance, forestry, agriculture, entrepreneurship and small business operations.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G81

**Appliance repair, basic**

Strategies required to teach the principles and techniques of small appliance repair including diagnosis, restoration and maintenance.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G82

**Cosmetology, basic**

Strategies for teaching the fundamentals of hairdressing, styling and personal grooming.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G83

**Culinary arts, basic**

Strategies required to teach the introduction to food selection, preparation and baking as well as short order and quantity cooking practices.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G84

**Horticulture, basic**

Strategies required to teach the introduction to a wide variety of horticultural activities such as botany, plant identification and propagation, landscape planning and design.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G85

**Hospitality, basic**

Strategies in teaching the principles of hotel management including service, system operations, promotion and staff training.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G86

**Natural resources management, basic**  
Introduction to the study of parks, wetlands, natural habitat of birds and animals and strategies in teaching administration and operations of these resources.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G87

**Personal care, basic**

Strategies required to teach how to care for infirm and elderly persons in a home setting or in a hospital or extended care facility.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G88

**Textiles and clothing, basic**

A study of the design and manufacture of textiles and strategies for teaching their application to garment design and construction.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9G89

**Upholstery, basic**

The study and teaching strategies for the design and construction of wood and metal furniture structures, padding techniques and the application of coverings.

*Lectures, seminar, lab, 3 hours per week.*

EDUC 9M00-9M09

**Intermediate basic curriculum and instruction**

Basic strategies for teaching at the intermediate level. An overview of current principles of student development and learning, curriculum development and implementation for the intermediate division.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: an acceptable undergraduate degree that includes two credits in the teachable subject area.

*Note:* additional prerequisite for certification purposes: an Ontario Teacher's



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Certificate endorsed with primary, junior or senior additional basic qualification on the Ontario Teacher's Record Card.

(9M00) Language arts (English)

(9M01) Mathematics

(9M02) Science

(9M03) History

(9M04) Geography

Consult the Continuing Studies Program regarding teachable subject areas to be offered.

EDUC 9M20-9M29

### Senior basic curriculum and instruction (major)

Basic strategies for teaching at the senior level. An overview of current principles of student development and learning, curriculum development and implementation for the senior division.

Prerequisite: an acceptable undergraduate degree with a major of at least five credits in the teachable subject area and an Ontario Teacher's Certificate endorsed at the primary, junior or intermediate level. Candidates may be asked to successfully complete three weeks of practice teaching as assigned by the Faculty of Education during a scheduled block in Winter Term or Spring Session. *Lectures, seminar, practicum, 3 hours per week.*

(9M20) English

(9M21) Mathematics

(9M22) Science

(9M23) History

(9M24) Geography

(9M25) Computer science

(9M26) Individual and society

(9M27) Physical education

Consult the Continuing Studies Program regarding teachable subject areas to be offered.

EDUC 9M30-9M39

### Senior basic curriculum and instruction (minor)

Basic strategies for teaching at the senior level. An overview of current principles of student development and learning, curriculum development and implementation for the senior division.

Prerequisite: an acceptable undergraduate degree with at least three credits in the teachable subject area and an Ontario Teacher's Certificate endorsed at the sen-

ior level. Candidates may be asked to successfully complete three weeks of practice teaching as assigned by the Faculty of Education during a scheduled block in Winter Term or Spring Session. *Lectures, seminar, practicum, 3 hours per week.*

(9M30) English

(9M31) Mathematics

(9M32) Science

(9M33) History

(9M34) Geography

(9M35) Computer science

(9M36) Individual and society

(9M37) Physical education

Consult the Continuing Studies Program regarding teachable subject areas to be offered.

### (Special Education)

#### Note:

In order to be recommended to the Ministry of Education for Special Education, part I, candidates must complete EDUC 9P01 plus one basic elective half credit; for Special Education, part II, EDUC 9P02 and a second elective (either part II or another part I); for Special Education for part III, EDUC 9P03 and a third elective (see EDUC 9P04-9P15). Students with previous credits in Special Education should consult the department regarding their further studies.

EDUC 9P01

### Special education, foundations I

The identification of students with special educational needs; characteristics of the five main exceptionalities: behavioral, communicative, intellectual, physical and multiple. Models, theories and approaches of educational exceptionalities, their classroom implications, available community resources and effective school/student/parent communication.

*Lectures, seminar, practicum, 3 hours per week.*

Note: Open to certified teachers.

Credit will not be granted to students who have prior credit in EDUC 417.

EDUC 9P02

### Special education, foundations II

Further studies of the educational impli-

cations of multiple exceptionalities; formal and informal assessment of exceptional students and their particular needs; the design and implementation of appropriate educational programs for students at a more advanced level; reporting techniques, the Identification Placement and Review Committee (IPRC) process and the teacher's role in it.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01 and basic elective.

Credit will not be granted to students who have prior credit in EDUC 418.

EDUC 9P03

### Special education, foundations III

Leadership and consultation in special education at the school and board level. The design of workshops or training sessions and their evaluation; preparation for a referral to an Identification Placement and Review Committee (IPRC) and for case conferences. This course includes a specialist special studies component.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P02 and basic or advanced elective.

Credit will not be granted to students who have prior credit in EDUC 419.

### (Electives)

EDUC 9P04

### Special education, learning disabilities I (basic)

The identification of speech, language and learning disabilities; the development and implementation of appropriate teaching intervention strategies.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01.

EDUC 9P05

### Special education, learning disabilities II (advanced)

Theories and strategies of teaching students with speech and language disabilities; identification of these exceptionalities, their subclassifications and relationship to other exceptionalities.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01 and 9P04.

## EDUC 9P06

**Special education, teaching the trainable retarded pupil (T.R.P.) (basic)**

The development of programs for teaching the trainable retarded; the history and causes of retardation; the response of the family and society to the special child. The planning of effective learning environments, instructional approaches, behavioral management and evaluative processes.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01.

Credit will not be granted to students who have prior credit in EDUC 496hc.

## EDUC 9P07

**Special education, teaching the trainable retarded pupil (T.R.P.) (advanced)**

Issues surrounding screening, identification and education of trainable retarded students; studies of curriculum development, gross motor and physical development, language and communication skills. Living skills.

Prerequisite: EDUC 9P01 and 9P06.

*Lectures, seminar, practicum, 3 hours per week.*

Credit will not be granted to students who have prior credit in EDUC 497hc.

## EDUC 9P08

**Special education, gifted I (basic)**

The nature of educational giftedness; basic screening and identification procedures; the design and implementation of appropriate educational programs.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01.

## EDUC 9P09

**Special education, gifted II (advanced)**

Theories and strategies for teaching gifted students; the identification of this exceptionality and its subclassifications and its relationship to other exceptionalities.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01 and 9P08.

## EDUC 9P10

**Special education, behavior I (basic)**

Current issues in the education of the behaviorally exceptional student; basic

screening and identification procedures; the design and implementation of appropriate educational programs.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01.

## EDUC 9P11

**Special education, behavior II (advanced)**

Theories and strategies for teaching the behaviorally exceptional student; the identification of this exceptionality and its subclassifications and its relationship to other exceptionalities.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01 and 9P10.

## EDUC 9P12

**Special education, combined electives I (basic)**

The identification of students with learning disabilities, behavioral exceptionalities and giftedness and provision of appropriate programming for them. This elective course will be offered whenever specific special education basic courses are not available.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01.

## EDUC 9P13

**Special education, combined electives II (advanced)**

Theories and strategies for teaching students with learning disabilities, behavioral exceptionalities and giftedness. This elective course will be offered whenever specific special education advanced courses are not available.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01 and 9P12.

## EDUC 9P14

**Physical exceptionalities (basic)**

Basic methodologies in teaching children with physical and health-related disabilities.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01.

## EDUC 9P15

**Physical exceptionalities (advanced)**

Planning, implementing and evaluating

programs for children with physical and health-related disabilities.

*Lectures, seminar, practicum, 3 hours per week.*

Prerequisite: EDUC 9P01 and 9P14.

## EDUC 9V91-9V95

**Special topics in education**

Topics selected from year-to-year on the basis of specific areas of instructional expertise and candidate interest.

*Lectures and seminars, twelve 3 hour sessions.*

Prerequisite: Permission of the Director of the Continuing Studies Program.

Credit will not be granted to students who have prior credit in EDUC 498hc or 9P90.

## EDUC 9P99

**Program measurement and evaluation**

Measurement and evaluation of program and student achievement with a focus on methods of data collecting, formulating measurement instruments and techniques for analyzing and communicating results. Content for the course will be based on the Ministry of Education Ontario Assessment Instrument Pool (OAIP).

*Lectures, seminars, practicum, twelve 3 hour sessions.*

Note: Open to teachers and administrators. This course carries BEd credit only.

# Education - Concurrent BSc/BEd

## Director

Donald J. Ursino  
Department of Biological Sciences

## Co-ordinator

Rosamund Battye

## Assistant Co-ordinator

Sandra Regier

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## General information

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*Mackenzie Chown, D332*

The Faculty of Mathematics and Science and the Faculty of Education, co-operate in offering a concurrent pass BSc/BEd program for students interested in teaching math or science at the junior/intermediate level; grades 4 - 10.

Each student must choose to concentrate in either mathematics or in one of the following sciences: Biology, Chemistry, Earth Sciences and Physics. For all students, the BSc/BEd program combines a focus on contemporary science and mathematics with the development and application of pedagogical techniques.

Students in the BSc/BEd program must be registered full-time and follow the prescribed program. Any exceptions must have the approval of the director of the program. Students must maintain a 75 percent overall average each year in all academic grade-marked courses.

Successful graduates of the four year program will receive a Bachelor of Science degree in General Studies, a Bachelor of Education degree and an Ontario Teacher Certificate qualifying them to teach grades 4 - 10.

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## Admissions

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Those applying to the science concentration of the program must have six OAC credits and an overall average of at least 80 percent in two science OAC credits, one mathematics OAC credit and one English OAC credit. Those applying to the mathematics concentration must have six OAC credits and an overall average of at least 80 percent in two mathematics OAC credits, one science OAC credit and one English OAC credit. Other criteria for admission may include a written submission, letters of reference and an interview.

Students may apply to enter the second year if their overall first year average is 75 percent or above and their first year program has closely matched that of the first year course requirements of the BSc/BEd program. The program has a limited enrolment and therefore admission into the second year level will be limited.

### Notes:

1. CHST 2F10 has a placement in the schools and must be taken during the Fall/Winter session.
2. Practice teaching may have to be scheduled in May and June of year 4.

## Programs for Science BSc/BEd

### Biology

#### Year 1

BIOL 1F90; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; EDUC 8Y04, 8Y05; MATH 1P98; PSYC 1F90; one humanities context credit.

#### Year 2

BIOL 2P04, 2P05; one credit from BIOL 2P90, 2P91, 2P93, 2P98; CHST 2F10; EDUC 8P06; ERSC 1F95; MATH 1P97.

#### Year 3

One-half credit from BIOL 2P90, 2P91, 2P93, 2P98; one and one-half BIOL credits at the 3(alpha)00 level; EDUC 2F01 or 3F01, 8Y21, 8Y23; PHYS 1F25 or 1F90; SCIE 3P91.

#### Year 4

EDUC 4P01, 8D09, 8F08; one credit from EDUC 8Y20, 8Y22, 8Y24, 8Y25, 8Y26, 8Y27; one elective credit (HIST or ENGL recommended if not taken in year 1). This elective should be taken in spring or summer to allow for practise teaching in year 4.

### Chemistry

#### Year 1

CHEM 1P90, 1P91; EDUC 8Y04, 8Y05; ERSC 1F95 or BIOL 1F90; MATH 1P93 or 1P97; PSYC 1F90; one humanities context credit.

#### Year 2

CHEM 2P03, 2P20; one credit from CHEM 2P12, 2P32, 2P42; CHST 2F10; EDUC 8P06; MATH 1P94 or 1P98 (Note: MATH 1P97 cannot be taken in combination with either MATH 1P93 or MATH 1P94); PHYS 1F25 or 1F90.

#### Year 3

One-half credit from CHEM 2P12, 2P32, 2P42 (not taken in year 2); one and one-half CHEM credits at the 3(alpha)00 level; EDUC 2F01 or 3F01, 8Y21, 8Y23; ERSC 1F95 or BIOL 1F90; SCIE 3P91.

#### Year 4

EDUC 4P01, 8D09, 8F08; one credit from EDUC 8Y20, 8Y22, 8Y24, 8Y25, 8Y26, 8Y27; one elective credit (HIST or ENGL recommended if not taken in year 1). This elective should be taken in spring or summer to allow for practise teaching in year 4.

### Earth Sciences

#### Year 1

ERSC 1F95; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; EDUC 8Y04, 8Y05; MATH 1P97 or 1P98; PSYC 1F90; one humanities context credit.

#### Year 2

Two credits from ERSC 2P01, 2P21, 2P22, 2P31, 2P32, 2P61, 2P64; BIOL 1F90; CHST 2F10; EDUC 8P06; MATH 1P97 or 1P98.

#### Year 3

Two credits from ERSC 3P21, 3P24, 3P25, 3P31, 3P43, 3P61, 3P71, 3P91,

3P92, 3P94, 3P97, 3P98, 3P99; EDUC 2F01 or 3F01, 8Y21, 8Y23; PHYS 1F25 or 1F90; SCIE 3P91.

*Year 4*

EDUC 4P01, 8D09, 8F08; one credit from EDUC 8Y20, 8Y22, 8Y24, 8Y25, 8Y26, 8Y27; one elective credit (HIST or ENGL recommended if not taken in year 1). This elective should be taken in spring or summer to allow for practise teaching in year 4.

**Physics**

*Year 1*

PHYS 1F90; BIOL 1F90 or ERSC 1F95; EDUC 8Y04, 8Y05; MATH 1P93; PSYC 1F90; one humanities context credit.

*Year 2*

PHYS 2P20, 2P21, 2P31, 2P50; CHEM 1P80, 1P81 or 1P90, 1P91; CHST 2F10; EDUC 8P06; MATH 1P94.

*Year 3*

PHYS 2P30, 2P41, 3P50; PHYS 3P91 or 3P92; BIOL 1F90 or ERSC 1F95; EDUC 2F01 or 3F01, 8Y21, 8Y23; SCIE 3P91.

*Year 4*

EDUC 4P01, 8D09, 8F08; one credit from EDUC 8Y20, 8Y22, 8Y24, 8Y25, 8Y26, 8Y27; one elective credit (HIST or ENGL recommended if not taken in year 1). This elective should be taken in spring or summer to allow for practise teaching in year 4.

**Program for Mathematics BSc/BEd**

*Year 1*

MATH 1P12, 1P93, 1P95; BIOL 1F90 or ERSC 1F95; PSYC 1F90; EDUC 8Y04, 8Y05; one humanities context credit.

*Year 2*

MATH 1P66 and either 2F92 and 2F94 or 1P90, 1P98 and 3F92; CHST 2F10; EDUC 8P06; one credit from CHEM 1P80 and 1P81, CHEM 1P90 and 1P91, PHYS 1F25 or 1F90. (Note: MATH 2F92 and 2F94 must be taken when offered).

*Year 3*

MATH 3P91 and either 1P90, 1P98 and 3F92 or 2F92 and 2F94; EDUC 2F01 or 3F01, 8Y21, 8Y23; any year 1 science credit in a discipline not taken in years 1 and 2.

*Year 4*

EDUC 4P01, 8F08, 8D09; one credit from EDUC 8Y20, 8Y22, 8Y24, 8Y25, 8Y26, 8Y27; one elective credit (HIST or ENGL recommended if not taken in year 1). This elective should be taken in spring or summer to allow for practise teaching in year 4.

# English Language and Literature

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## Officers of instruction

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### Chair

Kenneth M. McKay

### Professors

R. Douglas MacDonald  
Kenneth M. McKay

### Associate professors

Gordon H. Coggins  
Brian Crick  
John A. Lye  
George C. Reecer  
Marilyn J. Rose  
Ian C. Shaw  
Stella Slade  
Angus A. Somerville

### Assistant professor

Elizabeth Sauer

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## General information

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### Mackenzie Chown, A310

The Department of English Language and Literature aims to foster an informed and critical intelligence. To achieve this end our programs require choices from a broad range of historical period courses, as well as from various genre courses and courses in the history of the language of criticism and in critical theory. The Department offers two four-year programs leading to the BA (Honors) degree and a three-year program leading to the BA (Pass) degree; in addition, in either a three- or four-year program, English may be taken with another discipline for a combined degree (e.g., in English and French, English and Mathematics or English and Psychology).

Seminars (small discussion groups) are the rule in all English courses, for they encourage the student to become an active participant in the study of literature.

With essay assignments and our close criticism of these assignments, the student should learn to write in a literate, subtle and disciplined way.

The Department of English Language and Literature offers credit for those Drama courses included among the list of English courses offered, subject to the conditions noted below under honors and pass programs.

English majors are free to take any elective which their timetable will allow, but the following are recommended as most useful: classical civilization, Drama, Film, History, Liberal Studies, other languages (including Greek and Latin), Philosophy.

Before registering in a year 2 ENGL course, students must have successfully completed one year 1 ENGL credit or have received permission from the instructor; students may register in a year 3 ENGL course after completing one year 1 ENGL credit and three year 2 credits, at least two of which are ENGL courses, or after receiving the permission of the instructor; ENGL courses at the year 4 level are normally restricted to year 4 English students; other students may be admitted by permission of the instructor.

Courses listed at a "90" level or above in year 2 and 3 (e.g., 2F97, 3F92) may be taken in either year; nonetheless, students must recognize that such courses may well be given at the more advanced level and are not to be enrolled in without preparation.

Students in other disciplines who have not taken ENGL 1F91 may take a senior English course as an elective with permission of the instructor.

Students intending to take a degree in English should discuss their program with a member of the department.

### Core courses:

List A: 2F21 (or 3F21), 2F40, 4F10

List B: 2F30, 2F61, 2F91, 3F30 (or 4F30), 3F40

List C: 2F50, 2F55, 2F91, 3F31, 3F32, 3F42.

(for English as a Second Language see page 48)

### Note:

Students who registered before April 1988, may, in completing their degree requirements, add 2F20 and 3F35 to the above lists and are not required to conform to the distribution between the lists noted in the current requirements. Students registered before April 1987, may also add 2F97.

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## Honors program

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Eleven ENGL credits are required, including: ENGL 1F91 and 3F91 or 3F92; two credits from List A; two credits from List B, one of which must be ENGL 2F30, 3F30 (or 4F30); one credit from List C; one credit in dramatic literature (ENGL 2F97 or DRAM 3F10 recommended); three ENGL credits numbered 3(alpha)90 or above.

### Note:

A maximum of three DRAM credits may be taken for English credit. ENGL 3F93 is recommended for all honors students.

### Year 1

ENGL 1F91; one science and one social science context credit; two elective credits. (See language requirement.)

### Year 2

Three ENGL credits; two elective credits. (See language requirement.)

### Year 3

Three ENGL credits; two elective credits.

### Year 4

Four ENGL credits, including at least two credits from ENGL 3F91, 3F92, 3F93, 4F05, 4F10, 4F30, 4F70, 4F99, 4M40-4M49; one elective credit.

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## English Plus

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English Plus is an alternative four year honors program in English Language and Literature. Developed by the depart-

ment at the request of and in conjunction with senior secondary teachers of English with the Lincoln County Board of Education, it offers a student the traditional discipline of English literary criticism together with an understanding of those developments in language theory, contemporary media and communications currently significant in critical discourse and now regularly expected of English teachers at the secondary level in Ontario. Among the twenty credits required, space is also made for three credits in a second "teachable" area (see Note 2.), as well as for courses satisfying context and language requirements. The equivalent of the traditional single honors program in English Language and Literature, English Plus offers students a different pattern of academic discipline and preparation, one which, while developed with a particular set of needs in mind, transcends these to address the general situation of critical discourse today.

*Notes:*

1. A student's program must be approved by the chair of the Department of English Language and Literature.
2. If the "teachable" area satisfies language or context requirements, another elective becomes available.
3. There are fourteen designated major credits in the English Plus program: (a) nine in ENGL; (b) three in FILM and COMM; (c) two in LING.

Nine ENGL credits are required, including: ENGL 1F91 and 3F91 or 3F92; two credits from List A; two credits from List B, one of which must be ENGL 2F30, 3F30 (or 4F30); one credit from List C.

*Note:*

4. Normally a minimum of two credits at each of the year 2, year 3 and year 4 levels are required.

Plus:

Minimum of three credits in another "teachable" (see p. 122); two credits from the Department of Applied Language Studies (from LING 1F94, 2F60, 2F80, 3F94); minimum of three credits

from FILM 1F94, 2F04, 2F90, 2F97, 2P20, 2P21, 3F27, 3F50, 3P93, 3P94, 3P95, 3P96, COMM 1F90, 2F92, 3F10, 4P23; one credit in a language other than English (see language requirement); one science and one social science context credit.

Normal pattern:

*Year 1*

ENGL 1F91; one science and one social science context credit; one credit from LING; one additional credit fulfilling the language requirement.

*Year 2*

Three ENGL credits; one credit from FILM or COMM; one additional credit in second "teachable" area.

*Year 3*

Three ENGL credits; one credit from LING; one credit in a second "teachable" area.

*Year 4*

Two ENGL credits chosen from ENGL 3F91, 3F92, 3F93, 4F05, 4F10, 4F30, 4F70, 4F99, 4M40-4M49; two credits from FILM or COMM; one credit in a second "teachable" area (see Note 2.).

**Pass program**

Satisfactory completion of the first three years of an honors program entitles a student to apply for a pass degree.

Students reading for a three-year pass degree with a major in English are required to complete seven credits in English, including ENGL 1F91; one credit from List A; one credit from List B; one credit from List C; one additional credit from List A or List B. Three ENGL credits must be numbered 2(alpha)90 or above.

*Note:*

The department recommends that students take one credit in dramatic literature from ENGL 2F97, DRAM 1F93 (or 2F95 or 2F98), DRAM 2F97, 3F10, 3F93. A maximum of two DRAM credits

may be taken for English credit.

**Combined major programs**

Honors program

Students reading English as part of a combined major honors program are required to complete seven ENGL credits, including: ENGL 1F91 and 3F91 or 3F92; one credit from List A; one credit from List B; one credit from List C. It is expected that an honors student will take two ENGL credits at the year 2 level, two at the year 3 level and two at the year 4 level. (See language requirement.)

Pass program

Students reading English as part of a combined major pass program are required to complete five ENGL credits, including: ENGL 1F91; one credit from List A; one credit from List B; one credit from List C. It is expected that a student will take two credits in ENGL at the year 2 level and two at the year 3 level. (See language requirement.)

**Special combined program in English and Drama**

A student reading for a combined pass degree in English and Drama must: (i) meet the requirements of each department for a combined major; (ii) take at least ten credits in ENGL and DRAM for a pass degree, fourteen credits for an honors degree; (iii) take at least five credits from each department for a pass degree, seven from each department for an honors degree.

**Language requirement for humanities majors**

English majors must complete one credit in a language other than English or, in special cases, ENGL 3F92 (*Old English*). Where half credit courses are used

## English Language and Literature

to satisfy the requirement, both half credits must be in the same language.

Students are expected to complete the language requirement by the end of year 2 except in the case of ENGL 3F92.

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### Prerequisites and restrictions

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

\*ENGL English courses that may be taken for credit in drama.

\*DRAM Drama courses that may be taken for credit in English.

Please see *Note* under the English pass and honors program descriptions above.

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

\*ENGL 1F91

#### Survey of major English writers

The critical study of works by major authors in English literature from the 14th century to the 20th, including: Chaucer, Shakespeare, Milton, Swift, Austen, Dickens, Eliot. Special attention will be given to students' writing.

*Lectures, seminar, 3 hours per week.*

ENGL 1F92

#### Logic, rhetoric and practical criticism

(also offered as LBST 1F92)

Methods of developing organizing and expressing ideas, directed to improving skills of thought, reading and persuasion. Classical logic and rhetoric will be exam-

ined in the works of Aristotle and Cicero. Students will analyse the logic and rhetoric of writing on a range of subjects in a variety of modes.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in ENGL 1F99 or LBST 195hc.

ENGL 1F99

#### Language and thought

The critical study of selected writings in literature, natural science and social science. Special attention will be given to students' writing.

*Lectures, seminar, 3 hours per week.*

Note: Enrolment limited to 60 students per section.

Credit will not be granted to students who have prior credit in ENGL(LBST) 192; ENGL 1P97 or 1P98.

ENGL 1P97

#### Language and thought for Bachelor of Accounting students I

The critical study of selected writings in literature, natural science and social science, designed to improve thinking, reading and writing through a study of some of the most significant uses of language in the 19th and 20th centuries. Restriction: Open only to students admitted to the accounting program as well as BAcc majors.

Credit will not be granted to students who have prior credit in ENGL 1F99.

ENGL 1P98

#### Language and thought for Bachelor of Accounting students II

A continuation of the course of study of ENGL 1P97.

Restriction: Open only to students admitted to the accounting program as well as BAcc majors.

Prerequisite: ENGL 1P97.

Credit will not be granted to students who have prior credit in ENGL 1F99.

ENGL 2F10

#### Young people's literature

The critical study of children's fiction and poetry from the past to the present. Fairy tales, fantasy, adventure, realistic and problem novels, animal stories and fables are explored as works of art in relation to the themes and concerns of literature for young people.

*Lectures, seminar, 3 hours per week.*

Prerequisite: ENGL 1F91 or permission of the instructor.

Credit will not be granted to students who have prior credit in EXST 195 or 211.

ENGL 2F21

#### 16th century literature

Prose and poetry of Tudor England with emphasis on Sidney, Spenser and Shakespeare.

*Lectures, seminar, 3 hours per week.*

Prerequisite: ENGL 1F91 or permission of the instructor.

ENGL 2F30

#### Romantic literature

Poetry and prose of the late 18th and early 19th centuries. Emphasis is upon the major poets: Blake, Wordsworth, Coleridge, Byron, Shelley, Keats.

*Lectures, seminar, 3 hours per week.*

Prerequisite: ENGL 1F91 or permission of the instructor.

ENGL 2F40

#### Restoration and 18th century literature

Literature of the age of wit and satire (Dryden, Pope, Swift) and of the age of sensibility (Gray, Collins, Cowper, Burns); includes drama, poetry, prose.

*Lectures, seminar, 3 hours per week.*

Prerequisite: ENGL 1F91 or permission of the instructor.

ENGL 2F50

#### Commonwealth literature

Literature written in countries of the Commonwealth other than Canada. Close analyses are made of the books to demonstrate the literary merit of the writing. Where appropriate, emphasis will be placed on the Colonial and post-Colonial political struggles and the changing nature of the political, economic and social processes of societies in the Commonwealth.

*Lectures, seminar, 3 hours per week.*

Prerequisite: ENGL 1F91 or permission of the instructor.

Credit will not be granted to students who have prior credit in ENGL 3F15.

ENGL 2F55

#### Modern fiction

Forms and techniques of fiction in selected writers in English of the 20th century.

*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91 or permission of the instructor.  
Credit will not be granted to students who have credit in ENGL 3F50.

ENGL 2F61

**American literature**

American writing from the Puritan to the Modern period, including such writers as Bradstreet, Taylor, Edwards, Franklin, Whitman, Dickinson, James, Wharton, Frost, Faulkner, Hemingway.

*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91 or permission of the instructor.  
Credit will not be granted to students who have prior credit in ENGL 2F60 or 3F50.

ENGL 2F91

**Canadian literature in English**

Emphasis on the critical reading of poetry and fiction drawn from the pre-Confederation period to the present day. Representative works by such writers as Haliburton, Lampman, Roberts, Leacock, Pratt, Callaghan, Birney, Laurence, Atwood and Findley.

*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91 or permission of the instructor.

ENGL 2F97

**Shakespeare**

The poetry and plays.  
*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91 or permission of the instructor.  
Note: Students may take DRAM 3F10 in place of ENGL 2F97.  
Credit will not be granted to students who have prior credit in ENGL(DRAM) 397 or 296 or DRAM 3F10(310).

ENGL 2M90-2M99

**English area studies**

Studies in a specialized area of English literature.  
*Lectures, seminar, 3 hours per week.*

**1993-94: (2M92) Women novelists and the development of the novel**

Close reading of novels by women writers including Burney, Austen, Eliot, Wharton, Woolf, Lessing and Atwood.  
Credit will not be granted to students who have prior credit in the ENGL 4F99 version of this course, as offered in 1986-87.

ENGL 2P50

**The Bible as literature**

(also offered as LBST 2P50)  
A survey of the Old and New Testaments, 1611 version, from the perspective of literary criticism -- careful reading, interpretation and analysis.

*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91 or permission of the instructor.

ENGL 3F05

**Creative writing**

A seminar course in the craft of creative writing, for selected students in any discipline; years 3 and 4 preferred. Apply in writing, with portfolio, well before classes begin. Details from department.  
*Seminars, 3 hours per week.*

Prerequisite: ENGL 1F91, two year 2 ENGL credits or permission of the instructor.

ENGL 3F21

**Milton and the 17th century**

The literature of the late Renaissance in England, from Donne and Jonson to Marvell and Browne, including all of Milton's major works.

*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91, two year 2 ENGL credits or permission of the instructor.

ENGL 3F30

**Victorian literature**

Poetry, novels and non-fictional prose from 1825 to 1914; from the high Victorian period (Carlyle, Mill, Tennyson, Browning), through the pre-Raphaelite (Rossetti, Morris), to developments in the last half of the century (in Meredith, Swinburne, Hopkins, Hardy, Wilde, Kipling).

*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91, two year 2 ENGL credits or permission of the instructor.

ENGL 3F31

**Modern literature in English**

Major developments in prose, poetry and fiction of Britain and America from 1900 to 1950.

*Lectures, seminar, 3 hours per week.*  
Prerequisites: ENGL 1F91, two year ENGL credits or permission of the instructor.

Credit will not be granted to students who have credit in ENGL 3F45.

ENGL 3F32

**Contemporary literature in English**

Major developments in prose, poetry and fiction in Britain and America from 1950 to the present.

*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91, two year 2 ENGL credits or permission of the instructor.

Credit will not be granted to students who have credit in ENGL 3F45.

ENGL 3F40

**The novel**

Major English novelists and the development of the form from its origins (Bunyan) to the close of the 19th century (Hardy and/or James).

*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91, two year 2 ENGL credits or permission of the instructor.

Credit will not be granted to students who have prior credit in ENGL 3F00.

ENGL 3F42

**Modern poetry**

Modernism and its alternatives in poetry of the 20th century, including contemporary poetry. Major poets include Yeats, Eliot, Auden, Stevens.

*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91, two year 2 ENGL credits or permission of the instructor.

ENGL 3F91

**History of the language**

The development of the English language from its origins to the present state of English in North America. The nature and cause of major internal changes in the language will be examined, together with the influence of external cultural and linguistic forces in the shaping of modern English. Selected literary models will be used to illustrate the stylistic development of English.

*Lectures, seminar, 3 hours per week.*  
Prerequisite: ENGL 1F91, two year 2 ENGL credits or permission of the instructor.



## English Language and Literature

### ENGL 3F92

#### Old English

Literature and language; a close reading of prose and several major poems in Old English, including passages from *The Parker Chronicle*, *Wanderer*, *Seafarer*, *Deor*, *The Battle of Maldon*, *The Dream of the Rood*.

*Seminars, 4 hours per week.*

Prerequisite: ENGL 1F91, two year 2 ENGL credits or permission of the instructor.

### ENGL 3F93

#### Literary criticism

History of the principles and practice of literary criticism. An examination of major critics from Aristotle to Eliot, Leavis and Brooks.

*Seminars, 3 hours per week.*

Prerequisite: ENGL 1F91, two year 2 ENGL credits or permission of the instructor.

Credit will not be granted to students who have prior credit in ENGL 3F70 and 4F00.

### ENGL 4F05

#### Poetic form

Close reading of poems in English from the Renaissance to the 20th century. Emphasis upon period styles, formal conventions and variations and changing theories of poetry. Special concentration upon contemporary American poetry, rivalry between traditional and "open" forms.

*Seminar, 3 hours per week.*

Restriction: Open only to ENGL Plus and ENGL (single or combined) majors with a minimum of 14.0 overall credits and with either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

### ENGL 4F10

#### Middle English

A critical examination of the English literature of the late Middle Ages; studies in the work of Chaucer and Langland and in the Northern alliterative revival.

*Seminars, 4 hours per week.*

Restriction: Open only to ENGL Plus and ENGL (single or combined) majors with a minimum of 14.0 overall credits and with either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

### ENGL 4F30

#### 19th century thought

Writings in social criticism, aesthetics, education, science and philosophy, from Burke to Wilde.

*Seminars, 3 hours per week.*

Restriction: Open only to ENGL Plus and ENGL (single or combined) majors with a minimum of 14.0 overall credits and with either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

### ENGL 4F70

#### Contemporary literary theory

The major schools and the essential issues of contemporary literary theory.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to ENGL Plus and ENGL (single or combined) majors with a minimum of 14.0 overall credits and with either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

### ENGL 4F99

#### Senior research tutorial or thesis

Either tutorial combined with individual research or a thesis on a specialized topic or major author, of mutual interest to the student and instructor. Students are urged to make arrangements with an instructor and to plan their projects in the spring, for the following year. A written proposal *must* be submitted for department approval before September 1.

*Time to be arranged.*

Restriction: Open only to ENGL Plus and ENGL (single or combined) majors with a minimum of 14.0 overall credits and with either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

### ENGL 4M40-4M49

#### Major writers

Restriction: Open only to ENGL Plus and ENGL (single or combined) majors with a minimum of 14.0 overall credits and with either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

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### Drama courses available for English credit

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#### \*DRAM 1F93

Introduction to drama

#### \*DRAM 2F95

The forms of comedy

#### \*DRAM 2F97

Canadian drama

#### \*DRAM 2F98

The forms of tragedy

#### \*DRAM 3F10

Shakespeare

#### \*DRAM 3F93

Twentieth century drama

Only one credit from DRAM 1F93, 2F95 or DRAM 2F98 may be taken for English credit.

For course descriptions, see Film Studies, Dramatic and Visual Arts.

# Extrdepartmental Studies

Director  
TBA

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## General information

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Schmon Tower 401D

Students' programs may be enriched by the inclusion of certain degree credit courses which do not fall under the auspices of existing academic departments. Such courses may be taken for credit as electives in any degree program.

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## Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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## Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

### EXST 1P01

#### Introduction to Mohawk, part I

Using audio-lingual methods, students will learn common sentence forms and vocabulary. Stories recorded by native speakers will be used for listening, reading and writing. Taped exercises will be provided for individual practice. Materials will be chosen for cultural as well as linguistic content. About one-third of class time will be devoted to study of Mohawk culture.

*Lectures, lab, 4 hours per week.*

### EXST 1P02

#### Introduction to Mohawk, part II

Part II extends the language skills developed in part I. In particular, extended dialogues and storytelling will increase fluency in speech and reading. Transcription of and response to recorded language samples will provide opportunities for extended writing in the Mohawk language.

*Lectures, lab, 4 hours per week.*

Prerequisite: EXST 1P01.

### EXST 1P03

#### Introduction to Cayuga, part I

Using audio-lingual methods, students will learn common sentence forms and vocabulary. Stories recorded by native speakers will be used for listening, reading and writing. Taped exercises will be provided for individual practice. Materials will be chosen for cultural as well as linguistic content. About one-third of class time will be devoted to study of Iroquois culture.

*Lectures, lab, 4 hours per week.*

### EXST 1P04

#### Introduction to Cayuga, part II

Part II extends the language skills developed in part I. In particular, extended dialogues and storytelling will increase fluency in speech and reading. Transcription of and response to recorded language samples will provide opportunities for extended writing in the Cayuga language.

*Lectures, lab, 4 hours per week.*

Prerequisite: EXST 1P03

### EXST 2F20

#### Comparative religion

Studies in the world's major religions, their founders, teachings, scriptures and development, with readings from primary sources.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in REST 190 or 220.

### EXST 2F50

#### Aspects of human sexuality

Now offered as HLST 2F50.

See the Health Studies Program listing.

### EXST 2F60

#### Old Testament studies

Such themes as covenant, promise, mes-

siah and sacred signs will be traced in their development through Hebrew history from the perspective of the historical, prophetic and wisdom books of the Old Testament.

*Lectures, seminar, 3 hours per week.*

### EXST 2F70

#### New Testament studies

A critical examination of New Testament thought, using selected passages from the Gospels and Acts.

*Lectures, seminar, 3 hours per week.*

### EXST 2F80

#### Yoga: theory and practice

The philosophical-psychological-religious system called Yoga. Drawing from its original bases as formulated and oriented in the Indic tradition, the integral discipline of body, mind and self is studied, with a focus on its contemporary relevance and practical application in psychological and neuro-physiological areas.

*Lectures, seminar, 3 hours per week.*

Prerequisite: any 1(alpha)90 level credit in PHIL, PSYC, PHED or ASIA or permission of the instructor.

### EXST 2F95

#### Language pathology and audiology

Now offered as LING 2F95.

See the Department of Applied Language Studies listing.

### EXST 2P03

#### Intermediate Cayuga, part I

Application of literacy skills and extension of vocabulary and listening skills by reading taped stories and legends and responding orally to audiotaped exercises and in writing to printed exercises.

*Lectures, lab, 4 hours per week.*

Prerequisite: EXST 1P03 and 1P04.

### EXST 2P04

#### Intermediate Cayuga, part II

Development of communication abilities and acquisition of the grammatical forms of future, aorist, indefinite and perfect tenses; transitive pronouns, noun incorporation and locatives.

*Lectures, lab, 4 hours per week.*

Prerequisite: EXST 1P03 and 1P04.

# Film Studies, Dramatic and Visual Arts

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## Officers of instruction

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### Chair

Warren Hartman  
Joan Nicks (as of July 1, 1993)

### Film Studies

#### Director

Barry K. Grant

#### Professors

Barry K. Grant  
James C.M. Leach  
Mary Jane Miller

#### Assistant professors

Joan Nicks  
Jeannette M. Sloniowski

### Dramatic Literature and Theatre

#### Director

Glenys McQueen-Fuentes

#### Professors

James C. M. Leach (Dramatic Literature)  
Mary Jane Miller (Dramatic Literature)  
Robert C. Nunn (Dramatic Literature)

#### Associate professors

Peter Feldman (Theatre)  
Warren Hartman (Theatre)

#### Assistant professors

Margaret Burke (Drama in Education)

#### Instructors

Mary Katherine Newman (Voice)  
Adrian Palmieri (Technical theatre)  
Barbara Plater-Szaflarski (Drafting)  
Alan Titley (Stage management)  
Ivy Verhoeckx (Technical theatre)

#### Resident Company, *Theatre Beyond Words*

Terry Judd  
Harrow Maskow  
Robin Patterson  
David Satterthwaite  
C. Schott

### Visual Arts

#### Director

Murray Kropf

#### Associate professors

Warren Hartman (Art History)  
Merijeane Morrissey-Clayton (Studio Art)

#### Assistant professors

Derek Knight (Art History)  
Murray Kropf (Studio Art)

#### Visiting artist

Marla Panko

### Departmental Staff

#### Technical director

Adrian Palmieri

#### Wardrobe director

Ivy Verhoeckx

#### Slide librarian

Lesley Bell

#### Film technician

Robert MacMorine

#### Lighting design

Ken Garrett

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### General information

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#### *Thistle west 135*

At Brock the study of the arts is concerned with their nature, function and history, from the classics to popular culture, from primitive drawings and rituals to the avant-garde. Through critical analysis of classic works and personal creative development, the student will gain an awareness of the ways in which the artistic media function. Our aim is to contribute to the vitality of the arts by developing sensitive, creative and articulate artists, teachers and audiences.

The Department of Film Studies, Dramatic and Visual Arts offers honors, pass, single and combined major programs in four fields of study: Dramatic Literature, Film, Theatre and Visual Arts. These four majors represent the

student's choice of concentration within the department. Single honors and pass programs are also offered in Contemporary Cultural Studies.

### Facilities

The Film Program uses *The Studio*, Brock Centre for the Arts and the Podium Theatre, which is equipped for both 16mm and 35mm projection. Senior students have access to a film and video study room.

The Theatre Program uses the many facilities of the Brock Centre for the Arts, including the 543 seat *Theatre* and its experimental stage, *The Studio*, *The Playhouse* and *The Space*. Scenery, properties and construction workrooms are part of the Centre for the Arts complex.

Visual Arts facilities include a slide collection, art studios and a darkroom.

### Extra-curricular activities

The department presents and sponsors theatre productions, film series, exhibitions, public lectures and an annual spring festival of student work. The University regularly hosts mime performances and workshops by its resident company, the internationally acclaimed *Theatre Beyond Words*.

Brock Centre for the Arts presents a professional season of international and Canadian artists in theatre, dance and music, family and children's events. In addition, Brock's Fine Arts Committee arranges for a variety of visiting artists and events and a program of art exhibitions.

The department offers the following courses for teachers or those planning to become teachers:

FILM 2F04, THEA 2F10, 3F09, 3F11, 3F12.

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### Contemporary Cultural Studies

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This program is designed for students who wish to gain a critical view of contemporary culture from a number of different perspectives.

*Note:*

Students are required to discuss their program with the department chair.

### Honors program

*Year 1*

FILM 1F94; COMM 1F90 or CANA 1F91; DRAM 1F93 or VISA 1F90; one second language credit; science or social science context credit.

*Year 2*

FILM 2P20, 2P21; DRAM 1F93 or VISA 1F90; two credits from CANA 2M90-2M99, COMM 2F92, DRAM 2F97, FILM 2F54, 2F90, 2F97, VISA 2F26, 2F50, 3F05; science or social science context credit.

*Year 3*

FILM 3F50 or 3F91; two credits from DRAM 3F93, FILM 3F90, VISA 3F95; one credit from CANA 3F91, COMM 3F10, DRAM 2F97, FILM 2F54, 2F97, 3P94, 3P95, 3P96, VISA 2F50, 3F05; one elective credit.

*Year 4*

FILM 4F30 or 4F90; three credits from CANA 3F91, COMM 4P50, 4P51, DRAM 3F93, 4F94, FILM 3F50, 3F90, 3F91, 3P93, 3P94, 3P95, 3P96, 4F94, 4P10, 4P20, VISA 3F95; one elective credit.

Students preparing for graduate school are advised to take DRAM or FILM 4F94.

### Pass program

Satisfactory completion of the first three years of the honors program entitles students to apply for a pass degree.

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### Language requirement for humanities majors

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Contemporary Cultural Studies majors are required to complete one credit in a language other than English. Where half credit courses are used to satisfy the requirements, both half credits must be in the same language. It is recommended that students fulfil this requirement by year 2.

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### Prerequisites and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

\*\* FAPA Fine and performing arts course which is cycled every two years.

\*\*FAPA 2F16

**Introduction to arts administration**  
Practical problems in the operation of a professional theatre, dance or music company in Canada. Topics may include: basic administration, the role of boards of directors, complexities of provincial and national grant systems, publicity and promotion techniques principles of staffing, tax and copyright regulations and the mechanics of touring in Canada and abroad.

*Lectures, seminar, 3 hours per week.*

FAPA 2F98

**Approaches to dance**

Dance as an art form. The course aims to develop a vocabulary of movement spe-

cific to dance, examine dance choreography and its principles, explore various theoretical issues such as historical survey, dance in society, dance analysis and dance criticism; dance as it relates to other art forms and the role of dance in education. Limited practical component. *Lectures, lab (studio), seminar, 3 hours per week.*

FAPA 2M90-2M99

**Special studies in fine arts**

Studies in a selected area involving a number of artistic media. Topics to be announced by the department.

*Lectures, seminar, 3 hours per week.*

FAPA 3P82

**Psychology of the arts**

(also offered as PSYC 3P82)

Psychological responses to art. Topics include: color, form, motion, rhythm, space and their relationships; proportion and balance; empathy and aesthetic distance; abstraction and symbols. The relation of aesthetic behavior to other aspects of psychological functioning will also be considered.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to COMM (single or combined), CCST (single) and PSYC (single or combined) majors until date specified in BIRT guide. Open only to students with a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisites: PSYC 1F90 and third-year standing or permission of the instructor.

FAPA 4F99

**Honors thesis**

A critical, historical or creative project in fine arts of mutual interest to the student and the instructor. Students are urged to arrange and plan their projects in the spring for the following year. A written proposal must be approved by the program director before registration.

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### Dramatic Literature

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The Dramatic Literature program is an interlocking series of courses, with the objective of helping the student to develop a critical awareness of drama both as text and as performance; and to recre-

## Film Studies, Dramatic and Visual Arts

ate the play imaginatively from a study of the text itself and from the context of its conventions, traditions and stage history.

### Note:

ENGL 1F91 is recommended as an elective for students in the Dramatic Literature program.

### Honors program

Twelve credits are required: DRAM 1F93, 2F95, 2F97, 2F98, 3F10, 3F93, 4F90, 4F94; THEA 3F00; three additional Film Studies, Dramatic and Visual Arts credits.

### Pass program

Eight credits are required: DRAM 1F93; four credits from DRAM 2F95, 2F97, 2F98, 3F10, 3F93; THEA 3F00; two additional Film Studies, Dramatic and Visual Arts credits.

### Combined honors and pass programs

An honors program must include: DRAM 1F93; four credits from DRAM 2F95, 2F97, 2F98, 3F10, 3F93; DRAM 4F90, 4F94. It is recommended that honors students take THEA 3F00 as an elective.

A pass program requires the above minus DRAM 4F90, 4F94. DRAM and THEA majors must have at least five credits from each discipline.

### Dramatic literature and English

The student must: (i) meet the requirements of each department for a combined major; (ii) take at least ten credits in English and dramatic literature for a pass degree, fourteen for an honors degree; and (iii) take at least five credits from each department for a pass degree and seven for an honors degree.

CLAS 3P02 and 3P04 are recommended electives.

Year 3 courses are normally restricted to students with at least three second-year credits or special permission of the instructor.

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## Language requirement for humanities majors

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Students in the dramatic literature stream are required to complete one credit in a language other than English. Where half credit courses are used to satisfy the requirements, both half credits must be in the same language. It is recommended that students fulfil this requirement by year 2.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

\*DRAM           Dramatic literature course that may be taken for credit in English.

†DRAM           Dramatic literature course which is cycled every two years.

\*DRAM 1F93  
**Introduction to drama**  
Fundamentals of dramatic criticism. Study of selected dramatic texts from the ancient Greeks to the present; emphasis on genre, convention and historical context.

*Lectures, seminar, 3 hours per week.*

\*†DRAM 2F95  
**The forms of comedy**  
Comedy and related dramatic forms (e.g., farce) will be analysed in their theatrical and social contexts and in relation

to the development of ideas about comedy. Some attention may be paid to parallel forms in the drama of the orient.  
*Lectures, seminar, 3 hours per week.*  
Prerequisite: DRAM 1F93 or permission of the instructor.

\*†DRAM 2F97

### Canadian drama

The Canadian experience as expressed by Canada's playwrights on stage, in radio and on television, using both English-language plays and French-language plays in translation.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in DRAM 291hc.

\*†DRAM 2F98

### The forms of tragedy

Two major periods in the development of the genre: the Classical period and the Renaissance; and the modern dramatic response to the problems of the tragic vision.

*Lectures, seminar, 3 hours per week.*

Prerequisite: DRAM 1F93 or permission of the instructor.

Credit will not be granted to students who have prior credit in DRAM 315.

DRAM 2M90-2M99

### Special studies in drama

Studies in a specialized area of drama. Topics to be announced by the department.

*Lectures, seminar, 3 hours per week.*

Prerequisite: DRAM 1F93 or permission of the instructor.

†DRAM 2P91

### Canadian radio and television drama

The aesthetics and distinctive characteristics of Canadian radio and television anthology drama.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in DRAM 2F97.

\*†DRAM 3F10

### Shakespeare

A critical study of Shakespeare's works in their literary and theatrical context.

*Lectures, seminar, 3 hours per week.*

Note: Available for credit as ENGL 2F97.

Credit will not be granted to students who have prior credit in DRAM 296, DRAM 397, ENGL 296, ENGL 2F97.



**Film Studies, Dramatic  
and Visual Arts**

**FILM 1F94**

**Introduction to film studies**

Critical and historical approaches to world cinema from the silent to the contemporary period.

*Lectures, seminar, 3 hours per week plus weekly film lab.*

**FILM 2F04**

**Screen education**

Principles of critical analysis in the study of film and television. Introduction to media theory and screen studies for the secondary school level. The use of film and television analysis in the context of various subjects of study (e.g., English, history, art, social studies).

*Lectures and films, 3 hours per week.*

**\*\*FILM 2F54**

**Documentary film**

(also offered as COMM 2F54 and SOCI 2F54)

The documentary film from its beginnings in photography and the *actualités* of the Lumières through traditions and developments in documentary practice. The history, theory and aesthetics of documentary film and its cultural implications.

*Lectures, seminar, 3 hours per week; plus weekly film lab.*

Prerequisite: FILM 1F94 or SOCI 1F90 or COMM 1F90 or permission of the instructor.

**FILM 2F90**

**Film history**

Approaches to film history, with emphasis on classical Hollywood cinema, European art cinema and the avant-garde.

*Lectures, seminar, lab, 5 hours per week.*

Prerequisite: FILM 1F94 or permission of the instructor.

Credit will not be granted to students with prior credit in FILM 2P92 or 3P92.

**\*\*FILM 2F97**

**Canadian cinema**

(also offered as COMM 2F97)

A critical and historical study of Canadian cinema and selected directors.

*Lectures, seminar, 3 hours per week plus weekly film lab.*

Prerequisite: FILM 1F94, FILM (COMM) 2F24 or FILM (COMM) 2P20, 2P21 or permission of the instructor.

**FILM 2P20**

**Introduction to popular culture**

(also offered as COMM 2P20)

Historical, theoretical and critical approaches to popular culture in various forms.

*Lectures, seminar, lab, 4 hours per week.*

Prerequisite: FILM 1F94 or COMM 1F90 or CANA 1F91 or permission of the instructor.

Credit will not be granted to students with prior credit in FILM (COMM) 2F24.

**FILM 2P21**

**Canadian popular culture**

(also offered as COMM 2P21)

A critical survey of the media in Canada. Studies in the popular arts, with special reference to the ways in which institutions (e.g., CBC, NFB) and selected artists identify and express a Canadian cultural imagination.

*Lectures, seminar, lab, 4 hours per week.*

Prerequisite: FILM 2P20 or permission of the instructor.

Credit will not be granted to students with prior credit in FILM (COMM) 2F24.

**FILM 3F27**

**Basic production**

Introduction to the theory and practice of film and/or video techniques: specific assignments, viewing of films and/or video works and production work.

Students seeking permission of the instructor should contact the department prior to registration. Enrolment will be limited to 15.

*Workshops, seminar, 3 hours per week; additional production time as required.*

Prerequisite: two FILM credits or permission of the instructor.

Note: Materials fee required.

Credit will not be granted to students who have prior credit in FILM 394 or COMM 327.

**FILM 3F50**

**Theory and criticism of television**

(also offered as COMM 3F50)

A critical study of the aesthetics of television. Historical and international perspectives and alternative practices will be considered.

*Lectures, seminar, 3 hours per week, plus weekly lab.*

Prerequisite: FILM (COMM) 2F24 or FILM (COMM) 2P20, 2P21.

**FILM 3F90**

**Film theory**

Film theory from its origins to recent developments, including montage, realism and expressionism, semiotic, psychoanalytic and feminist theories.

*Lectures, seminar, lab, 4 hours per week.*

Prerequisite: FILM 2F90.

Credit will not be granted to students with prior credit in FILM 2P91 or 3P91.

**FILM 3F97**

**Screened women**

(also offered as COMM 3F97 and WISE 3F97)

A critical study of woman's representation as aesthetic and cultural subject, from classical Hollywood cinema to contemporary women's cinema, in the context of feminist film theories and including other popular media (e.g., music videos, television).

*Lectures, seminar, 3 hours per week, plus weekly film lab.*

Prerequisites: FILM 1F94, 2P91 and 2P92 or WISE 1F90 and 2F91 or permission of the instructor.

Credit will not be granted to students with prior credit in FILM, COMM or WISE 3F54.

**FILM 3P91**

**Contemporary film theory**

Studies in recent film theory, including semiotic, psychoanalytic and feminist theory.

*Lectures, seminar, lab, 4 hours per week.*

Prerequisites: FILM 2P91 and 2P92.

Credit will not be granted to students who have prior credit in FILM 3F95.

**FILM 3P92**

**Avant-garde cinema**

Critical and theoretical analyses of avant-garde films and movements.

*Lectures, seminar, lab, 4 hours per week.*

Prerequisite: FILM 3P91.

Credit will not be granted to students who have prior credit in FILM 3F95.

**FILM 3P93**

**Authorship in the cinema**

Issues of personal and collaborative creativity in film through the study of the style, themes and development of selected filmmakers.

*Lectures, seminar, lab, 3 hours per week, plus weekly film lab.*

Prerequisite: FILM 2F90 or permission of the instructor.

FILM 3P94

**Film genre**

Approaches to genre criticism and theory through the study of a particular film genre.

*Lectures, seminar, lab, 3 hours per week, plus weekly lab.*

Prerequisite: FILM 2F90 or permission of the instructor.

FILM 3P95

**National cinema**

Study of selected national cinemas with emphasis on their relationship to national cultural traditions.

*Lectures, seminar, lab, 3 hours per week, plus weekly film lab.*

Prerequisite: FILM 2F90 or permission of the instructor.

FILM 3P96

**Issues in popular culture**

Specialized studies in different media or the role of different media in a specific, social, historical or theoretical context.

*Lectures, seminar, lab, 4 hours per week.*

Prerequisite: FILM 2F90 or permission of the instructor.

FILM 4F30

**Cultural theory**

(also offered as COMM 4F30)

Central 20th century developments in theories of language, representation and cultural construction and their relevance to the field of communications. The emphasis and the theorists featured may vary from year-to-year.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to FILM (single or combined) and COMM (single or combined) majors with approval to year 4.

FILM 4F90

**Critical theory and practice**

(also offered as DRAM 4F90 and THEA 4F90)

An advanced study of critical theory. Its roots and its application to theatre, dramatic literature, film, radio, television and popular culture.

*Seminars, 3 hours per week.*

Restriction: Open only to FILM (single or combined), DRAM (single or com-

bined) or THEA (single or combined) majors with a minimum of 14.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

FILM 4F94

**Honors thesis in applied critical theory**

(also offered as DRAM 4F94 and THEA 4F94)

A thesis on a topic of mutual interest to the student and the instructor, with a critical, historical or contemporary focus.

Restriction: Open only to FILM (single or combined) or DRAM (single or combined) majors with a minimum of 14.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Note: See note 4 for registration information.

Prerequisite or co-requisite: FILM 4F30 or 4F90.

FILM 4V10-4V19

**Research seminar**

Advanced study in a specific area of film, television or popular media.

*Seminar, 3 hours per week.*

Restriction: Open only to FILM (single or combined) majors with a minimum of 14.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: FILM 3F90 or permission of the instructor.

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**Theatre**

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The premise of the Theatre program is that the study and practice of theatre is a significant discipline adding to the resources of a liberally-educated person. The program offers a comprehensive introduction to all aspects of theatre. Each year's work includes study of dramatic and theatre theory and opportunities to explore this theory in practice and to develop the skills and awareness necessary to apply it.

Production is to the theatre student what

laboratories are to the science student; therefore, the program includes a major production in each term as well as various minor productions and projects such as participation in the spring arts festival.

The THEA 1F99 class will work on small-scale productions. Students in upper year courses will have the opportunity to work on the two major productions in capacities determined by their particular course choices.

Students of all years participate in the spring festival according to the demands of their particular courses and their own need for varied experience.

Theatre courses are not normally available to auditors.

**Honors program**

Students seeking admission to the honors program must have a minimum grade average of 70 percent in their major and 70 percent in their dramatic literature courses. Enrolment in year 4 courses may be limited due to space limitations.

Twelve credits are required: DRAM 1F93; THEA 1F99, 2F40, 2F50, 3F00, 4F90; two credits from THEA 3F11, 3F40, 3F41, 3F50, 3F52, 3F91; one credit from FAPA 2F16, THEA 4F40, 4F41, 4F56, 4F94; three credits from DRAM 2F95, 2F97, 2F98, 3F10, 3F93. (DRAM 1F93 must be taken in year 1 or 2.)

**Pass program**

Eight credits are required: DRAM 1F93; THEA 1F99, 2F40, 2F50, 3F00; one credit from FAPA 2F16, THEA 3F11, 3F40, 3F41, 3F50, 3F52, 3F91; two credits from DRAM 2F95, 2F97, 2F98, 3F10, 3F93. (DRAM 1F93 must be taken in year 1 or 2.)

**Combined honors and pass programs**

Seven credits are required for an honors program: DRAM 1F93; THEA 1F99, 2F40, 2F50, 4F90; THEA 4F56 or 4F94; at least one credit from FAPA 2F16, THEA 3F11, 3F40, 3F41, 3F50, 3F52, 3F91; DRAM 2F95, 2F97, 2F98, 3F10 or 3F93.



## Film Studies, Dramatic and Visual Arts

Five credits are required for a pass program: DRAM 1F93; THEA 1F99, 2F40, 2F50; and at least one other credit from the following: THEA 3F11, 3F40, 3F41, 3F50, 3F52, 3F91; DRAM 2F95, 2F97, 2F98, 3F10, 3F93. FILM 1F94 or other Film Studies, Dramatic and Visual Arts credits are recommended as electives. THEA and DRAM combined majors must have at least five credits from each discipline.

### Note:

1. Students must satisfy context requirements before year 3.
2. Three credits numbered 2(*alpha*) 90 or above must be included in all pass programs.
3. At least three credits numbered 3(*alpha*) 90 or above must be included in all honors programs.
4. Year 3 courses are normally restricted to students with at least three second-year credits or special permission of the instructor.

## Language requirement for humanities majors

Students in the theatre stream are required to complete one credit in a language other than English. Where half credit courses are used to satisfy the requirements, both half credits must be from the same language. It is recommended that students fulfil this requirement by year 2.

## Prerequisites and restrictions

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

## Description of courses

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

### THEA 1F99

#### Introductory theatre practice

Basic theories of practical theatre and their application. Fundamentals of acting and theatre production. Students will also have the opportunity to develop their potential in production situations.

*Lectures, seminar, workshops, voice, 5 hours per week; additional production and rehearsal time as required.*

Restriction: Open only to students admitted to the THEA program.

Prerequisite: interview and audition before registration. Telephone the department office for details.

Note: Materials fee: \$25.00

Credit will not be granted to students who have prior credit in DRAM 199.

### THEA 2F02

#### Introduction to mime for teachers

History and theories of non-verbal theatre; critical analysis; practical work on mime techniques, expressive masks and improvisation in silent situations for both a practical and theoretical understanding of this theatre form.

*Lectures, workshops, 4 hours per week; additional rehearsal time as required.*

Prerequisite: THEA 2F10 or permission of the instructor.

Credit will not be granted to students who have prior credit in THEA 2F01 or 2F03.

### THEA 2F03

#### Introduction to mime for theatre students

A practical study of mime techniques, physical comedy and slapstick, expressive masks and improvisation in silent situations. The course aims to give a practical exploration of non-verbal theatre forms. Theoretical work will focus on developing the student actors' "visual vocabulary" to enable them to articulate their perceptions.

*Lectures, seminar, workshops, 4 hours per week; additional rehearsal time as required.*

Prerequisite: THEA 1F99 or permission

of the instructor.

Credit will not be granted to students who have prior credit in THEA 2F01 or THEA 2F02.

### THEA 2F10

#### Drama in education I

Drama in education is a means of self-discovery and expression and a method for integrating and enhancing learning in the classroom. Each student will be required to undertake field studies.

*Lectures, workshops, 3 hours per week.*

Note: Enrolment is limited to 30 students per section. Preference will be given to students with year 2 standing; others will be considered if numbers permit. Preference will be given to classroom teachers for the evening class. Please consult with the instructor.

Credit will not be granted to students who have prior credit in DRAM 210.

### THEA 2F40

#### Stage production I

The theory and practical application of the various elements which comprise theatrical productions are examined through lectures, labs and crew assignments.

*Lectures, workshops, 5 hours per week; additional production time as required.*

Prerequisite: THEA 1F99 or permission of the instructor.

Co-requisite for theatre majors:

THEA 2F50.

Note: Materials fee: \$25.00

Credit will not be granted to students who have prior credit in DRAM 240.

### THEA 2F50

#### Acting I

Acting and the principles of dramatic action. Emphasis is on developing an increased understanding of the active process and personal technique though both group and individual exercises.

*Lectures, workshops, voice, movement, 5 hours per week.*

Prerequisite: THEA 1F99 or permission of the instructor.

Co-requisite for theatre majors:

THEA 2F40.

Credit will not be granted to students who have prior credit in DRAM 250.

THEA 2M90-2M99

**Special studies in theatre**

Studies in a specialized area of theatre. Topics to be announced by the department.

*Lectures, seminar, 3 hours per week.*

Prerequisite: THEA 1F99 or consult the instructor for permission to register.

**1993-94: (2M93) Storytelling I: an introduction to performance values**

The role, importance, meaning and methods of storytelling in our own and other cultures. Emphasis on the performance aspects of storytelling.

Note: Admission is limited to 24 students

THEA 3F00

**Theatre history and theory**

Studies in theatre history and theoretical perspectives on theatre, emphasizing the relation of theatre to social process.

*Lectures, seminar, 3 hours per week.*

Prerequisite: For THEA majors: THEA 1F99; for DRAM majors: DRAM 1F93; or permission of the instructor.

Credit will not be granted to students with prior credit in THEA 2P98 and 3P00.

THEA 3F01

**Advanced mime**

A study of the creation of material for non-verbal theatre. Includes practical exploration of how visually defined characters are developed through improvisation; the process of finding plot and story; methods of writing and recording visual theatre. Study of the neutral mask is also included.

*Lectures, workshops, 4 hours per week; additional production time as required.*

Prerequisite: THEA 2F02 or 2F03 and permission of the instructor.

THEA 3F09

**Drama in education II**

An advanced course specializing in drama as both a teaching method for all subjects in the school curriculum and as a subject in its own right. Students will take part in workshops, research and write a paper in an area of special interest. *Lectures and workshops, 3 hours per week.*

Prerequisite: THEA 2F10.

Note: Enrolment limited to 16 students per section, to be determined by aca-

demic standing.

Credit will not be granted to students who have prior credit in DRAM 309.

THEA 3F11

**Theatre in education**

The art of theatre for young audiences. Includes a study of plays, scripting, appropriate genres, theatre visits, critical analyses and production planning. Students will participate in a practical theatre project.

*Lectures and labs, 3 hours per week.*

Prerequisite: THEA 2F10 or permission of the instructor.

Note: Admission limited to 24 students. Credit will not be granted to students who have prior credit in DRAM 311.

THEA 3F12

**Theatre in education: alternatives to the school play**

Studio course focussing on many alternative forms of presentation available to teachers: story theatre, readers' theatre, choral speaking, ensemble theatre, anthology and docudrama. Students will design a production suitable to their individual requirements.

*Labs, 6 hours per week (2 evenings of 3 hours).*

Prerequisite: THEA 2F10 or permission of the instructor.

Note: Enrolment limited to 24 students.

THEA 3F40

**Stage production II**

Advanced studies in stage craft and theatre management which may take the form of internships.

*Lectures, seminar, workshops, 5 hours per week; additional production time as required.*

Prerequisite: THEA 2F40 or permission of the instructor.

Credit will not be granted to students who have prior credit in DRAM 340 and 350 (Production) or THEA 342.

THEA 3F41

**Design I**

Specialist studies in design.

*Lectures, seminar, workshops, 5 hours per week; additional production time as required.*

Prerequisite: THEA 2F40 or permission of the instructor.

Credit will not be granted to students who have prior credit in DRAM 340 and 350 (Design).

THEA 3F50

**Acting II**

Further studies in acting technique. Emphasis is on the creation of character in dramatic situations.

*Lectures, seminar, workshops, 5 hours per week.*

Prerequisite: THEA 2F50 or permission of the instructor.

Credit will not be granted to students who have prior credit in DRAM 340 and 350 (Acting) or THEA 351.

THEA 3F52

**Directing I**

Specialist studies in directing.

*Lectures, seminar, workshops, 5 hours per week; additional production time as required.*

Prerequisites: THEA 2F50, DRAM 1F93 and one other DRAM course or permission of the instructor.

Credit will not be granted to students who have prior credit in DRAM 340 and 350 (Directing).

THEA 3F91

**Writing for stage, screen and radio**

Theory and practice of stage, screen and radio writing. Workshops on scripts in progress. Selected scripts may be produced in the department's annual spring festival.

*Seminars, workshops, 3 hours per week.*

Restriction: Consult the department regarding permission to register.

Prerequisite: DRAM 1F93 or permission of the instructor.

Note: Admission will be based upon submission of sample of written work and a reading list of plays read in recent past.

Materials fee; consult the department.

Credit will not be granted to students who have prior credit in DRAM 4F91.

THEA 3F99

**Honors tutorial**

Advanced study of an independent nature in an area of mutual interest to the student and the instructor.

Restriction: Consult the department regarding permission to register.

## Film Studies, Dramatic and Visual Arts

### THEA 3M90-3M99

**Advanced special studies in theatre**  
Studies in a specialized area of theatre at an advanced level. Topics to be announced by the department.

### THEA 4F40

#### Stage production III

Further studies in stage craft and theatre administration. Such study may take the form of tutorials and will include working closely with instructors on special projects.

*Lectures, seminar, workshops, 5 hours per week; additional production time as required.*

Restriction: Consult the department regarding permission to register.

Prerequisite: THEA 3F40 and permission of the instructor.

Credit will not be granted to students who have prior credit in DRAM 440 and 450 (Production) or THEA 442.

### THEA 4F41

#### Design II

Further studies in design. Such study may take the form of tutorials and will include working closely with the instructor on special projects.

*Lectures, seminar, workshops, 5 hours per week; additional production time as required.*

Restriction: Consult the department regarding permission to register.

Prerequisite: THEA 3F41 and permission of the instructor.

Credit will not be granted to students who have prior credit in DRAM 440 and 450 (Design).

### THEA 4F56

#### Advanced study in acting and directing

Students will work together as a small theatre company, collaborating on one or more productions. Acting and directing are taught in tandem as facets of the same analytical technique and then extended into production work.

*Lectures, seminar, 3 hours per week; workshops, additional production time as required.*

Restriction: Consult the department regarding permission to register.

Prerequisite or co-requisite: THEA 4F90.

Credit will not be granted to students who

have prior credit in THEA 4F40, 451, 4F42, DRAM 440 or 450 (Acting or Directing).

### THEA 4F90

#### Critical theory and practice

(also offered as DRAM 4F90 and FILM 4F90)

An advanced study of critical theory, its roots and its application to theatre, dramatic literature, film, television and popular culture.

*Seminars, 3 hours per week.*

Restriction: Open only to THEA (single or combined), DRAM (single or combined), and FILM (single or combined) majors with a minimum of 14.0 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Credit will not be granted to students who have prior credit in DRAM(FILM) 402.

### THEA 4F94

#### Honors thesis in applied critical theory

(also offered as DRAM 4F94 and FILM 4F94)

A critical, historical or contemporary thesis. Subject and supervision must be approved by the faculty supervisor before October 15.

Restriction: Consult the department regarding permission to register.

Prerequisite or co-requisite: THEA 4F90.

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## Visual Arts

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The program consists of studio and art history courses which provide a practical and critical understanding of the visual arts so that the student will develop a personal vision as well as theoretical awareness. Historical, theoretical, critical and cultural documents are investigated and students are encouraged to extend their experience through exposure to courses in the other fine arts programs and to departmental events.

Studio activities include several intuitive, analytical and experimental approaches. Students are assisted by artist-teachers who have professional experi-

ence and standing in the disciplines they teach.

The art history courses examine the historical development of artistic styles as well as the critical and aesthetic issues that these styles bring into play. Major artists and movements are related to their cultural contexts and artistic traditions from the ancient to the modern are explored to develop an awareness of the possibilities open both to the visual artist and to the well-informed critic.

Enrolment in year 4 courses may be limited due to space limitations.

### Honors program

Twelve credits are required: VISA 1F90, 1F92, 1F96, 3F95, 4F06; either VISA 2F92 and 3F92 or VISA 2F96 and 3F96; two credits from VISA 2F03, 2F05, 2F26, 2F94, 2M90-2M99, 3F03, 3M90-3M95; one credit from VISA 2F40, 2F50, 3F05, 3F20, 3M00-3M04, 3P22, 3P23 or both FAPA 3P82 and VISA 3P11; two other VISA credits.

### Pass program

Eight credits are required: VISA 1F90, 1F92, 1F96, 2F92; one credit from VISA 2F03, 2F04, 2F05; two credits from VISA 2F94, 2F96, 2M95-2M99, 3F03, 3F04; one credit from VISA 2F20, 2F40, 2F50, 2F90, 3M00-3M04, 3F05, 3F20, 3F95, 3P22, 3P23, FAPA 3P82.

### Combined honors program

Seven credits are required: VISA 1F90, 1F92, 1F96 and any other four VISA credits.

### Combined pass program

Five credits are required: VISA 1F90 and any four VISA credits.

#### Notes:

1. VISA 1F90 must be taken in year 1. Visual arts majors should also take VISA 1F92 or 1F96 in year 1.

2. Three credits numbered 2(alpha)90 or above must be included in all pass programs.

3. Three credits numbered 3(*alpha*)90 or above must be included in all honors programs.

4. From the following list no more than two VISA credits may be counted toward a pass degree, single or combined major and no more than three for an honors degree: VISA 3F20, 3P22, 3P23, 4M00-4M09, 4P11, 4P12, 4P13, 4P14.

5. Students who do not have the necessary prerequisites for studio courses (VISA 1F92, 1F96, 2F03, 2F04, 2F05, 2F92, 2F96, 3F03, 3F04, 3F92, 4F06) may be admitted by portfolio. Details are available from the departmental secretary. Enrolment in these courses will be limited to fifteen students; participation as an auditor is not permitted.

6. Year 3 courses are normally restricted to students with at least three second-year credits or permission of the instructor.

7. Non-majors may enrol in a maximum of one VISA studio course without a portfolio.

8. Portfolio evaluation and interview required for admission to the Visual Arts program. Consult the department.

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#### Language requirement for humanities majors

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Students in the visual arts program are required to complete one credit in a language other than English. Where half credit courses are used to satisfy the requirements, both half credits must be in the same language. It is recommended that students fulfil this requirement by year 2.

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#### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for

which prerequisites and/or restrictions have not been met.

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#### Description of courses

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

#### \*\*VISA

Visual arts course which is cycled every two years.

#### VISA 1F90

##### Introduction to the history of art

A critical survey of major styles in architecture, sculpture and painting from antiquity to the 20th century. No studio work.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in VISA(FINA) 191.

#### VISA 1F92

##### Drawing I

Exploration of the fundamental principles of drawing. Creative expression, graphic notation and the study of the figure will be included, with emphasis on observation and analysis. Students must supply their own materials.

*Lectures, studio work, 5 hours per week.*

Restriction: Open only to students admitted to VISA or VISA (single or combined) majors.

Prerequisite: Portfolio required prior to registration or permission of the VISA director.

Credit will not be granted to students who have prior credit in VISA(FINA) 202.

#### VISA 1F96

##### Foundation studio

A studio course in the principles of two-dimensional and three-dimensional composition. Individual and group projects in creative problem solving in a variety of media and materials. Students must supply their own materials.

*Lectures, studio work, 5 hours per week.*

Restriction: Open only to students admitted to VISA or VISA (single or combined) majors.

Prerequisite: Portfolio required prior to

registration or permission of the VISA director.

Credit will not be granted to students who have prior credit in VISA 1F95.

#### VISA 2F03

##### Painting I

Developing painting skills; introduction to color theory; explorations of technique. Students must supply their own materials.

*Lectures, studio work, 5 hours per week.*

Restriction: Open only to VISA (single or combined) majors until date specified in BIRT guide.

Prerequisite: VISA 1F90, 1F92 or 1F96 and/or permission of the instructor.

Credit will not be granted to students who have prior credit in FINA 203.

#### VISA 2F05

##### Sculpture

The fundamentals of sculpture including design, construction and analysis. Instruction in the handling and care of basic modelling materials. Mold making, casting, modelling and assemblage using various media are explored. Students must supply their own materials.

*Lectures, studio work, 5 hours per week.*

Prerequisite: Consult the instructor for permission to register.

Note: Materials fee; consult the department.

#### VISA 2F26

##### Photography

Fundamentals of the camera and dark-room work. The history of technological innovations, principles of critical analysis and the theory of photography will be studied. Emphasis on non-silver contact printing.

*Lectures, studio work, 5 hours per week.*

Prerequisite: VISA 1F90 and consult the instructor for permission to register.

Note: Materials fee; consult the department.

Credit will not be granted to students with prior credit in VISA 2F20.

#### VISA 2F40

##### Renaissance art and architecture

The classical resurgence of 1400-1600; individual artists and artistic trends in the social and intellectual context of the time. Art in Italy, France, Germany and the Netherlands.

## Film Studies, Dramatic and Visual Arts

*Lectures, seminars, 3 hours per week.*

Prerequisite: VISA 1F90 or permission of the instructor.

\*\*VISA 2F50

### Canadian art

The history of Canadian art and architecture from Confederation to the present day, including folk art, Native art and the avant-garde.

*Lectures, seminars, 3 hours per week.*

Prerequisite: VISA 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in FINA 250.

\*\*VISA 2F90

### Art and architecture, 1789-1914

Thematic examination of individuality, contemporaneity and progress in the context of the period's cultural, political and technological changes.

*Lectures, seminars, 3 hours per week, museum visits.*

Prerequisite: VISA 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in VISA (FINA) 291.

VISA 2F92

### Drawing II

Further exploration of the various media and modes of drawing, with an emphasis on the development of the student's personal imagery and techniques. Students must supply their own materials.

*Lectures, studio work, 5 hours per week.*

Prerequisite: VISA 1F90, 1F92, 1F96 and permission of the instructor.

Credit will not be granted to students who have prior credit in VISA 302.

VISA 2F94

### Art studies abroad

Studies in the artistic heritage of France at two bases: the medieval city of Angers in the Loire Valley and Paris. Brock visiting instructor, Guy Ducornet, a French artist, will conduct the visits, lectures and seminars and guide the students through their French experience. A command of French is useful but not necessary as the course will be conducted in English.

Restriction: Consult the department regarding permission to register.

Prerequisite: a VISA course or permission of the instructor.

VISA 2F96

### Interdisciplinary workshop I

An exploration of the concepts and processes of non-traditional media, including the relation of sound, language, movement and time to visual space. Work will proceed individually and collectively.

*Lectures, studio work, 5 hours per week.*

Prerequisite: VISA 1F96 or permission of the instructor.

Note: Materials fee; consult the department.

VISA 2M90-2M99

### Special studies in studio

Studies in a specialized area of the visual arts.

### 1994-95 Summer: (2M90) German art

Visits to historical and artistic sites in Germany. The major points of focus are the museums and Gothic cathedrals in Cologne, the contemporary collections in Frankfurt and Berlin and the *Documenta* exhibition in Kassel. A command of German is useful but not necessary. The course will be taught in English. Students should phone the Department of Film Studies, Dramatic and Visual Arts for information.

*Lectures, studio and field work.*

Prerequisite: one VISA credit or consult the instructor for permission to register.

VISA 3F03

### Painting II

Further studies in the painting process and in the development of a personal mythology. Students must provide their own materials.

*Lectures, studio work, 5 hours per week.*

Prerequisite: VISA 2F03 and permission of the instructor.

\*\*VISA 3F05

### Modern art: 1914-1970

A detailed study of 20th century art: the role and function of the artist in relation to the European and North American avant-garde movements.

*Lectures, seminar, 3 hours per week and museum visits.*

Prerequisite: VISA 1F90 and/or permission of the instructor.

Credit will not be granted to students who have prior credit in VISA 390 or 391.

VISA 3F20

### Greek art and architecture (also offered as CLAS 3F20)

Greek art and architecture from the Bronze Age through the Hellenistic period within the framework of historical and cultural change.

*Lectures, seminar, 3 hours per week.*

Prerequisite: VISA 1F90 or two of CLAS 1P91, 1P92, 1P95, 1P97.

Credit will not be granted to students who have prior credit in VISA(CLAS) 298.

VISA 3F92

### Expressive drawing

Advanced drawing as a means of expression. Students must supply their own materials.

*Lectures, studio work, 5 hours per week.*

Prerequisites: VISA 1F90, 2F92 and permission of the instructor.

\*\*VISA 3F95

### Contemporary art and ideas

A critical evaluation of the major trends in contemporary art, with an emphasis on the interrelationship between art and ideas about art.

*Lectures, seminar, 3 hours per week.*

Prerequisites: VISA 1F90 and one other art history credit and permission of the instructor.

Credit will not be granted to students who have prior credit in VISA 310.

VISA 3F96

### Interdisciplinary workshop II

Advanced workshop activities which raise critical awareness and question traditional modes of pictorial or sculptural conventions. Projects will be derived from contemporary art practice, including conceptual, installational, photographic, video and performance art.

*Lectures, studio work, 5 hours per week.*

Prerequisite: VISA 2F96.

VISA 3F99

### Honors tutorial

Advanced study in an area of mutual interest to the student and the instructor. A written proposal must be approved by the program director before registration. Restriction: Consult the program director regarding permission to register.

VISA 3M00-3M04

**Special studies in art history**

Prerequisite: VISA 1F90 or consult the instructor for permission to register.

*Lectures, seminar.*

**1993-94: (3M01) Women in art**

(also offered as WISE 3M01)

The contributions of women artists to the history of western painting and sculpture from the 16th to the 20th century. Feminist critical theories are used to encourage an understanding of how gendered attitudes have affected the development of art history and practice.

*Lectures, seminar, 3 hours per week.*

VISA 3M90-3M95

**Special studies in visual arts: praxis**

Studies that combine theory and studio

**(3M90) Contemporary representations of the body**

Interdisciplinary studio projects and seminar discussions based on assigned readings. The focus is on issues of representation (gender, sexuality, race, class, language, subjectivity and technology) as they relate to contemporary cultural production. Emphasis is on representations of the female body. Students must supply their own materials.

*Lectures, seminar, studio work, 5 hours per week.*

Restriction: Open only to VISA (single or combined) majors with a minimum of 9.0 overall credits.

VISA 3P22

**The art and architecture of Iron Age Italy and the Roman Republic**

(also offered as CLAS 3P22)

The art and architecture of the cultures of the Italian peninsula, in the first millennium BC, within the frame work of cultural change and external influences.

*Lectures, seminar, 3 hours per week.*

Prerequisite: one credit from CLAS 1P91, 1P92, 1P93, 1P95, 1P97 or VISA 1F90.

Credit will not be granted to students who have prior credit in CLAS(VISA) 299 or 3F21.

VISA 3P23

**The art and architecture of Rome in the Imperial Age**

(also offered as CLAS 3P23)

Roman art and architecture from Augustus to late Antiquity. Christian art and architecture and the influence of Roman aesthetics on the Renaissance and beyond.

*Lectures, seminar, 3 hours per week.*

Prerequisites: one credit from CLAS 1P91, 1P92, 1P93, 1P95, 1P97 or VISA 1F90.

Credit will not be granted to students who have prior credit in CLAS(VISA) 299 or 3F21.

VISA 4F06

**Honors studio**

An advanced course in studio concepts and practices. Students will realize personal studio projects, under supervision in a group context. Each student must submit a written project proposal for program approval before registration. Students should contact the director for further information. Students must supply their own materials.

*Studio work, 5 hours per week.*

Restriction: Consult the program director regarding permission to register.

Prerequisites: honors standing in VISA and permission of the program director.

VISA 4F99

**Honors thesis**

A critical, historical or creative project in the visual arts of mutual interest to the student and the instructor. Students are urged to arrange and plan their projects in the spring for the following year. A written proposal must be approved by the program director before registration.

Restriction: Consult the program director regarding permission to register.

Prerequisite: honors standing in VISA.

VISA 4M00-4M09

**Study in Mediterranean lands**

(also offered as CLAS 4M00-4M09)

First-hand topographical investigations of ancient sites and monuments: Study tours of the great cities and museums of the Mediterranean world with emphasis on the art and architecture of the Prehistoric, Classical and later periods. Offered

in the summer session for approximately three or four weeks of intensive study abroad.

Restriction: Consult the instructor regarding permission to register.

VISA 4P11

**The art and architecture of the ancient Near East**

(also offered as CLAS 4P11)

The art and architecture of Egypt, the Levant, Mesopotamia, Iran and eastern Anatolia from the Neolithic period through the Early Iron Age.

*Lectures, seminar, 3 hours per week.*

Prerequisite: VISA or CLAS credit numbered 2(alpha)90 or above or permission of the instructor.

Credit will not be granted to students who have prior credit in VISA(CLAS) 389hc.

VISA 4P13

**The art and archaeology of Cyprus**

(also offered as CLAS 4P13)

The cultural history of Cyprus from the Neolithic period through the Early Byzantine period, based on the archaeological record and of the role of Cyprus in the civilization of the eastern Mediterranean.

*Lectures, seminar, 3 hours per week.*

Prerequisite: VISA 1F90 or a CLAS credit numbered 2(alpha)90 or above or permission of the instructor.

Credit will not be granted to students who have prior credit in VISA(CLAS) 398hc.

VISA 4P14

**The Aegean Bronze Age**

(also offered as CLAS 4P14)

The development of the Bronze Age cultures of the Aegean Basin from 3000 to 1100 BC. The art and architecture of the Minoans on Crete and the Mycenaeans on the Greek mainland will be stressed.

*Lectures, seminar, 3 hours per week.*

Prerequisite: VISA 1F90 or a CLAS credit numbered 2(alpha)90 or above or permission of the instructor.

Credit will not be granted to students who have prior credit in VISA (CLAS) 395 or 402hc.

# French, Italian and Spanish

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## Officers of instruction

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### Chair

Sandra L. Beckett

### French section

#### Professors

Alexandre L.A. Amprimoz

Dennis F. Essar

Leonard A. Rosmarin

#### Associate professors

Sandra L. Beckett

Leslie A. Boldt-Irons

Barbara J. Bucknall

#### Assistant professor

Jane M. Koustas

#### Lecturer

Christine Horne

### Italian section

#### Associate professor

Corrado J.A. Federici

#### Assistant professor

Ernesto J. Virgulti, co-ordinator

### Spanish section

#### Associate professor

Juan A. Fernández

#### Assistant professor

Carlos J. Garcia-Gil

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## General information

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*Mackenzie-Chown, A207*

The Department of French, Italian and Spanish aims to provide students with a thorough and comprehensive coverage of language (spoken and written), literature and culture. Students are given encouragement and help to visit the lan-

guage environment in which they are interested.

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## Third-year in France

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Through a program offered by the department in collaboration with the University of Winnipeg, third-year students in French have the opportunity of spending one academic year at the Université de Perpignan in Perpignan, France, under the supervision of a resident director chosen alternately from Brock and the University of Winnipeg. In addition, the department favors and facilitates participation by French students at all levels in French immersion programs offered in France (Tours and Angers) and Québec.

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## Summer studies in Italy

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The department, in conjunction with York University, offers a summer program in Italy. The courses are held in Florence and Rome and the program runs from mid-May to the end of June. Students have their choice of a half credit course (three weeks) or a full credit course (six weeks). The courses offered include ITAL 1F00, ITAL 1F90, ITAL 1F95, ITAL 2P40, ITAL 2P92 and other upper-level literature courses. Students interested must register by the first week of April. See the department for details and registration.

### Notes:

1. Students with OAC standing or equivalent in the language (FREN, ITAL or SPAN) take course 1F90 in first year.

2. Students without OAC standing or equivalent in the language take courses numbered 1F00, 1P01, 1P02, 1P03 or 1F10, according to their background. See individual course descriptions.

3. Courses numbered 1F00, 1P01, 1P02, 1P03 and 1F10 may not be taken by students holding OAC credit or equivalent in the language, unless special authorization is obtained from the depart-

ment. Such authorization is granted only in the most exceptional cases.

4. Francophone students with OAC standing in Français are excluded from courses in the 1(alpha)00 series. They take FREN 2F10 in their first year (or FREN 2F00 if 2F10 is not offered). FREN 2F10 will in this instance fulfil the humanities context requirement.

5. French immersion graduates normally proceed directly to FREN 2F00 in first-year. FREN 2F00 will in this instance fulfil the humanities context requirement.

6. Courses numbered 1F90 and below are taught in the language to the extent possible; courses numbered 2F00 and above are taught entirely in the language, unless otherwise noted in the course description.

7. Prerequisite courses are specified in individual course descriptions.

8. FREN 1P01, 1P02, 1P03, ITAL 1F00, 1F10 and SPAN 1F00 may be taken for degree credit, but cannot be used to meet requirements for major programs in the languages concerned.

9. Language courses numbered 1F00, 1P01, 1P02, 1P03, 1F10, 1F90, 2F00 and 2F10 constitute a sequence. Once credit has been obtained in one of these courses, students are not allowed to take for credit a course in the same language with a lower number in the sequence. Students in French may not take two courses at different levels in the sequence during the same session. Students admitted to any FREN course numbered 2F00 or above may not concurrently or subsequently take a FREN course at the 1(alpha)00 level.

10. In all French major programs, FREN 1F90 is normally taken in first year (exceptions, see regulations 4 and 5 above); FREN 2F00 (or 2F10) and FREN 2F03 are normally taken concurrently in second year.

11. Students in a single major program in French must complete at least one credit in language and one credit in litera-

ture in each of years 3 and 4. Students in combined major programs in French must similarly complete at least one-half credit in language and one-half credit in literature in each of years 3 and 4.

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**Honors program in a single major**

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**French**

*Year 1*

FREN 1F90; one science and one social science context credit; two elective credits.

*Year 2*

FREN 2F00 or 2F10 and 2F03; one credit from FREN 2P42, 2P43, 2P50, 2P52, 2P55, 2P85, 2P86; two elective credits.

*Year 3*

Three FREN credits numbered 3(alpha)00 and above, including at least one credit in literature and one credit in language; two elective credits.

*Year 4*

Three FREN credits at the 4(alpha)00 level or above; two FREN credits from those numbered 3(alpha)00 to 4(alpha)99, including at least one credit in literature and one credit in language.

**Italian**

In combination with any other language as part of a combined major, see below; other combinations of programs are possible subject to departmental approval.

**Spanish**

*Year 1*

SPAN 1F90; one science and one social science context credit; two elective credits.

*Year 2*

SPAN 2F00, 2P10, 2P11, 2P90, 2P91; two elective credits.

*Year 3*

Three credits from SPAN 3P92 to 4F10; two elective credits.

*Year 4*

Five credits from SPAN 2P90 to 4F10. It should be noted that three credits numbered 3(alpha)90 or above must be included in all honors degrees.

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**Pass program in a single major**

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**French**

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Italian**

*Year 1*

ITAL 1F90; one science and one social science context credit; two elective credits.

*Year 2*

ITAL 2F00, 2F90, 2P40, 2P92; two elective credits.

*Year 3*

Three ITAL credits numbered 2(alpha)90 and above; two elective credits.

**Spanish**

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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**Honors program in two languages**

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(applicable to all languages)

*Year 1*

One credit in language A; one credit in language B; one science and one social science context credit; one elective credit.

*Year 2*

Two credits in language A; two credits in language B; one elective credit.

*Year 3*

Two credits in language A numbered 2(alpha)90 or above; two credits in language B numbered 2(alpha)90 or above; one elective credit.

*Year 4*

Two credits in language A; three credits in language B. Three credits numbered 3(alpha)90 or above must be included in each honors program, with at least one in each language.

*Note:*

Students completing an honors program in French must complete at least one-half credit in literature and one-half credit in language in each of years 3 and 4.

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**Pass program in two languages**

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(applicable to all languages)

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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**Combined major programs**

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**Honors program**

*Year 1*

One credit in the chosen language.

*Year 2*

Two credits in the chosen language.

*Year 3*

Two credits in the chosen language numbered 2(alpha)90 or above.

*Year 4*

Three credits in the chosen language numbered 3(alpha)90 or above. Three credits numbered 3(alpha)90 or above must be included in each honors program, with at least one credit in each language.

*Note:*

Combined majors in French must complete at least one-half credit in literature and one-half credit in language in each of years 3 and 4.

**Pass program**

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.



## French, Italian and Spanish

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### Combined major in Canadian Studies and French.

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In co-operation with the Canadian Studies program, the Department of French, Italian and Spanish offers a special combined major program in Canadian Studies and French. This program offers students an opportunity to combine a specialized interest in French Canadian literature and culture with interdisciplinary study of the broader context of Canadian culture and society. Details of the program may be found under the Canadian Studies entry in the calendar.

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### Prerequisites and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

#### FREN 1F90

##### Language and literature

Practice in speaking, reading and writing; self-expression through discussion. Selected literary texts.

*Lectures, 3 hours per week; plus language lab.*

Prerequisite: FREN 1P03 or OAC French (not in Français or immersion programs).

#### FREN 1P01

##### Introductory French I

Basic French: vocabulary, structures, pronunciation, spoken French. Oral and written exercises. Language laboratory. *Lectures, 3 hours per week, plus language lab.*

Note: May be taken only by students who have Ontario grade 9 French or equivalent or less.

Credit will not be granted to students who have prior credit in FREN 1F00 or 1F80.

#### FREN 1P02

##### Introductory French II

Continuation of FREN 1P01. Basic French: vocabulary, structures, pronunciation, spoken French. Oral and written exercises. Language laboratory.

*Lectures, 3 hours per week, plus language lab.*

Prerequisite: FREN 1P01 or Ontario grade 10 or 11 French or equivalent.

Credit will not be granted to students who have prior credit in FREN 1F00 or 1F80.

#### FREN 1P03

##### Introductory French III

Continuation of FREN 1P02. Basic French: vocabulary, structures, pronunciation, spoken French. Oral and written exercises. Language laboratory.

*Lectures, 3 hours per week, plus language lab.*

Prerequisite: FREN 1P02 or Ontario grade 12 French or equivalent. Students holding Ontario OAC French credits but who received low marks or have had little or no contact with the language for some time may take this course with departmental permission.

Credit will not be granted to students who have prior credit in FREN 1F80.

#### FREN 2F00

##### Grammar and composition

Intensive grammar review; literary expression; composition; critical written and oral expression through discussion of general topics.

*Lectures, 3 hours per week.*

Prerequisite: FREN 1F90 or OAC Français or OAC French immersion.

Note: Provisional registration only; please consult the department.

#### FREN 2F03

##### Introduction to literary studies in French

A selection of works representing different genres, historical periods and cultural traditions. *Commentaire de texte* and *dissertation*. Technical vocabulary, rhetorical terminology and interpretative concepts.

*Lectures, 3 hours per week, including seminar.*

Prerequisite: FREN 1F90 or OAC Français or OAC French immersion or equivalent.

Co-requisite: FREN 2F00 or 2F10.

Note: Provisional registration only; please consult the department.

Credit will not be granted to students who have prior credit in FREN 216, 2F01, 2F05 or any French literature course numbered 2(alpha)90 or higher.

#### FREN 2F05

##### Survey of French-Canadian literature (not offered after Spring 1993)

Introduction to the literature of French Canada; analysis of significant works in their historical and cultural context.

Recommended preparation for all further courses in French-Canadian literature.

*Lectures, 3 hours per week.*

Prerequisite: FREN 1F90 or OAC Français or OAC French immersion.

Credit will not be granted to students who have prior credit in FREN 216.

#### FREN 2F10

##### Grammar and composition for Francophones

Intensive grammar review; literary expression; composition; critical written and oral expression through discussion of general topics; transposition into French. Open only to Francophone students.

*Lecture, 3 hours per week.*

Prerequisite: FREN 1F90 or OAC Français or OAC French.

Note: Provisional registration only; please consult the department.

#### FREN 2P42

##### Children's literature in French to 1945

A selection of texts for children from the 17th century to 1945. Theory of children's literature. Authors studied include: Perrault, Mme de Beaumont, Mme d'Aulnoy, Mme de Ségur, Marcel Aymé.

*Lectures, 3 hours per week.*

Co-requisites: FREN 2F03 and either FREN 2F00 or 2F10.

Credit will not be granted to students who have prior credit in FREN 2F42.

FREN 2P43

**Children's literature in French from 1945 to the present day**

A selection of texts for children from 1945 to the present day. Theory of children's literature. Authors studied include: Bosco, Prévert, Ionesco, Yourcenar, Tournier, Le Clézio.

*Lectures, 3 hours per week.*

Co-requisites: FREN 2F03 and either FREN 2F00 or 2F10.

Credit will not be granted to students who have prior credit in FREN 2F42.

FREN 2P50

**Phonetics and phonology of English and French**

(also offered as LING 2P50)

Phonological and phonetic features of the English and French languages including: speech physiology, articulation, segmental and suprasegmental classifications; lab exercises in transcription, production and auditory discrimination.

*Lectures, lab, 3 hours per week.*

Prerequisite: FREN 1F90 or LING 1F94. Credit will not be granted to students with prior credit in FREN 2F50.

FREN 2P52

**Applications of French phonetics**

(also offered as LING 2P52)

Transcription skills for comparative analysis and description of the speech of Canadian and standard French and English speakers. Focus on assimilation, consonantal liaison, syllabic rhythm and accent, intonation and pedagogical contexts.

*Lectures, lab, 3 hours per week.*

Prerequisite: FREN(LING) 2P50.

Credit will not be granted to students with prior credit in FREN 2F50.

FREN 2P55

**Introduction to linguistics**

Theories of linguistics from Ferdinand de Saussure to the present, linguistic terms and concepts, the linguistic sign, Indo-European languages; applications of linguistics; language analysis at the different levels of description: phonetics/phonology, morphology/syntax, vocabulary and meaning.

*Lectures, 3 hours per week.*

Co-requisite: FREN 2F00 or 2F10.

FREN 2P70

**Francophone women writers in translation I**

(also offered as WISE 2P70)

Texts by women writers (in translation) from the 14th to the 19th century. Texts may vary from year-to-year. French majors can take this course only as an elective.

*Lectures, 3 hours per week.*

FREN 2P71

**Francophone women writers in translation II**

(also offered as WISE 2P71)

Texts by women writers (in translation) of the 20th century. Texts may vary from year to year. French majors can take this course only as an elective.

*Lectures, 3 hours per week.*

FREN 2P85

**Francophone women writers of the 20th century**

(also offered as WISE 2P85)

Francophone women writers outside of France. Particular emphasis on Québec women writers. Authors studied may include: Nicole Brossard, France Théoret, Jovette Marchessault and texts studied may focus on a variety of genres.

*Lectures, 3 hours per week.*

Co-requisite: FREN 2F03 and either FREN 2F00 or 2F10.

Credit will not be granted to students with prior credit in FREN 2F85.

FREN 2P86

**French women writers of the 20th century**

(also offered as WISE 2P86)

A selection of texts by French women writers of the 20th century. Authors studied will include: Colette, Simone de Beauvoir, Marguerite Duras, Marguerite Yourcenar.

*Lectures, 3 hours per week.*

Co-requisite: FREN 2F03 and either FREN 2F00 or 2F10.

Credit will not be granted to students who have prior credit in FREN 2F85.

FREN 3F82

**The civilization of France**

French civilization from the earliest times to the present: geography; military, religious and domestic architecture; social, cultural, religious and political insti-

tutions; folklore. Cultural excursions in the Languedoc-Rousillon area will be undertaken to give students a first-hand experience of the subject.

*Lectures, 3 hours per week.*

Prerequisite: any FREN credit numbered 2(alpha)00 or above.

Note: Offered in Perpignan, France.

Credit will not be granted to students who have prior credit in FREN 3F92.

FREN 3P01

**Translation I**

Fundamental principles of translation, advanced grammar and a variety of expressive possibilities in French. For students who have progressed significantly beyond basic French and who wish to acquire a fluent idiomatic writing style.

*Lectures, 3 hours per week.*

Co-requisite: FREN 2F00 or 2F10.

Credit will not be granted to students who have prior credit in FREN 2F49 or 2F99.

FREN 3P02

**Translation II**

Comparative stylistics, structural and semantic contrasts between French and English as well as cultural implications in language studies.

*Lectures, 3 hours per week.*

Prerequisite: FREN 3P01.

Credit will not be granted to students who have prior credit in FREN 2F49 or 2F99.

FREN 3P10

**Cultural analysis of business institutions**

Private and public institutions of France and Québec with special emphasis on the relationship among language, society and culture. Advanced composition and translation of technical texts.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F00 or 2F10 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in FREN 2F98.

FREN 3P11

**Cultural analysis of science and technology**

Scientific and technological French particularly stressing computer terminology. Advanced composition and translation of technical text.

*Lectures, 3 hours per week.*

## French, Italian and Spanish

Prerequisite: FREN 2F00 or 2F10 or consult the instructor for permission to register.

### FREN 3P15

#### Figurative language I

The study of semantics with particular emphasis on the theory and history of French idiomatic expressions. Applications through advanced composition.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F00 or 2F10.

Credit will not be granted to students who have prior credit in FREN 3F90.

### FREN 3P30

#### 17th century French theatre

Aesthetic and psychological approach to French classical theatre. Authors studied include Corneille, Molière, Racine.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F01 or 2F03.

Credit will not be granted to students who have prior credit in FREN 3F97.

### FREN 3P35

#### 18th century literature I

Narrative, theatre and philosophical writing in France up to 1759. Critical voices, ideological concerns, *Encyclopédie*. Authors may include: Montesquieu, Prévost, Marivaux, Voltaire, Diderot, Rousseau.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F01 or 2F03.

Credit will not be granted to students who have prior credit in FREN 211 or 2F92.

### FREN 3P36

#### 18th century literature II

Narrative, theatre and philosophical writing in France from 1759 onwards. Critical voices, ideological concerns. Authors may include: Voltaire, Diderot, Rousseau, Laclos, Beaumarchais.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F01 or 2F03.

Credit will not be granted to students who have prior credit in FREN 211 or 2F92.

### FREN 3P40

#### 19th century French novel I: Romanticism

Theory of Romanticism, romantic irony, question of the self and other. Novels by Constant, Stendhal, Balzac and Hugo.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F01 or 2F03.

Credit will not be granted to students who have prior credit in FREN 2F90.

### FREN 3P41

#### 19th century French novel II: Realism and Naturalism

Realism and mimesis, narrative voice, Naturalism and scientific determinism, *fin de siècle* interest in esoterism. Novels by Flaubert, Zola, Maupassant and Huysmans.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F01 or 2F03.

Credit will not be granted to students who have prior credit in FREN 2F90.

### FREN 3P50

#### 20th century French theatre

Influence of Dadaism, Surrealism, Existentialism. Topics include theatre of the absurd, social satire, the role of language. Plays by: Jarry, Giraudoux, Claudel, Anouilh, Cocteau, Beckett, Genet, Ionesco, Sartre.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F01 or 2F03.

Credit will not be granted to students who have prior credit in FREN 2F93 or 4F93.

### FREN 3P51

#### 20th century French novel to 1930

Classical form, psychological novel, influence of surrealism. Novelists studied include Proust, Gide, Alain-Fournier, Mauriac.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F01 or 2F03.

Credit will not be granted to students who have prior credit in FREN 2F93.

### FREN 3P52

#### 20th century novel from 1930 - 1950

Existentialism and the absurd, questions of political commitment and inner experience. Novelists studied include: Camus, Sartre, Malraux, Leiris, Duras.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F01 or 2F03.

Credit will not be granted to students who have prior credit in FREN 2F93.

### FREN 3P60

#### Literature of Africa and the Caribbean I

Narrative, poetry and theatre of French-speaking African and Caribbean countries. Historical, social and ideological concerns. Oral tradition, *négritude*, co-

lonial period, decolonization.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F01 or 2F03.

Credit will not be granted to students who have prior credit in FREN 2F41 or 2F91.

### FREN 3P61

#### Literature of Africa and the Caribbean II

Contemporary narrative, poetry and theatre of French-speaking African and Caribbean countries. Emphasis on post-independence voices and writing styles.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F01 or 2F03.

Credit will not be granted to students who have prior credit in FREN 2F41 or 2F91.

### FREN 3P70

#### French-Canadian narrative and essay I

Novels, short stories and essays from 19th century to *roman du terroir*. Social, historical and ideological concerns.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F03 or 2F05.

Credit will not be granted to students who have prior credit in FREN 2F95.

### FREN 3P71

#### French-Canadian narrative and essay II

Novels, short stories and essays from 1930s to *Révolution tranquille*. Reaction to *roman du terroir*, advent of *roman de mœurs urbaines* and *contestation*. Social and ideological concerns.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F03 or 2F05.

Credit will not be granted to students who have prior credit in FREN 2F95.

### FREN 3P72

#### French-Canadian theatre

Contemporary French-Canadian theatre: background and traditions, analysis of selected plays, international influences and current directions. Authors may include: Gélinas, Dubé, Hébert, Loranger, Tremblay, Barbeau, Germain, Maillet, Laberge, Charette, Dubois, Bouchard.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F03 or FREN 2F05.

Credit will not be granted to students who have prior credit in FREN 3F85, 3F95 or 3P95.

FREN 3P83

**Literary analysis and commentary**

Contemporary methodologies of literary analysis: recognition, study and appreciation of the elements of style and content, together with the organization of presentations in both oral and written form.

*Lectures, 3 hours per week.*

Prerequisites: FREN 2F03 and either 2F00 or 2F10.

Note: Offered in Perpignan, France. Credit will not be granted to students who have prior credit in FREN 3P93.

FREN 3P84

**Textual analysis and commentary**

Techniques of analysis and commentary as applied to both literary and non-literary texts. Students will prepare oral and written reports on selected passages.

*Lectures, 3 hours per week.*

Prerequisites: FREN 2F03 and either 2F00 or 2F10.

Note: Offered in Perpignan, France. Credit will not be granted to students who have prior credit in FREN 3P94.

FREN 4F99

**Research project**

A research project carried out with a faculty adviser. Students will establish the topic in consultation with members of the department.

Prerequisites: honors standing and permission of the department.

Note: Provisional registration only: please consult the department.

FREN 4P00

**History of the language**

The origins of the French language, its structure and evolution, its Latin heritage; the dynamic and ever-changing aspect of contemporary French; lexicology and vocabulary change, influence of modern technology on French and its various terminologies; the impact of other languages; methods of word formation; social influences upon language; discussion of Québec French, Acadian, Cajun.

*Lectures, 3 hours per week.*

Restriction: Consult the instructor regarding permission to register.

Prerequisite: FREN 2F00 or FREN 2F10. Credit will not be granted to students who have prior credit in FREN 4F00.

FREN 4P01

**Translation III**

Analysis of texts and their translations, lexical exactitude and cultural as well as technical implications in problem solving.

*Lectures, 3 hours per week.*

Prerequisite: FREN 3P02

Credit will not be granted to students who have prior credit in FREN 4F01.

FREN 4P02

**Translation IV**

Terminology, theory and history of the discipline and computer aided translation.

*Lectures, 3 hours per week.*

Prerequisite: FREN 4P01.

Credit will not be granted to students who have prior credit in FREN 4F01.

FREN 4P10

**Language and literature of the Middle Ages**

From the *chansons de geste* to the 15th century. Selected works from *chanson de geste, romans courtois, lais, satire, theatre and poetry*. An introduction to old French.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F03 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

Credit will not be granted to students who have prior credit in FREN 4F10.

FREN 4P15

**Figurative language II**

Stylistic, rhetoric and poetics. Applications through creative writing.

*Lectures, 3 hours per week.*

Prerequisite: FREN 3P15.

Credit will not be granted to students who have prior credit in FREN 3F90.

FREN 4P20

**16th century literature**

Humanism within the French Renaissance, *Pléiade* poetry. Authors studied include Rabelais, DuBellay, Ronsard, d'Aubigné, Montaigne.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F03 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

Credit will not be granted to students who have prior credit in FREN 4F20.

FREN 4P31

**17th century French prose and poetry**

Assessment of conflicting religious and moral currents in French classical literature. Authors studied include Descartes, Pascal, La Fayette, La Bruyère, La Fontaine, La Rochefoucauld.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F03 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

Credit will not be granted to students who have prior credit in FREN 3F97.

FREN 4P42

**19th century French poetry and theatre I: Romanticism**

French poetry and theatre of the Romantic era. Authors include Lamartine, Vigny, Hugo, Nerval and Musset.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F03 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

Credit will not be granted to students who have prior credit in FREN 3F98.

FREN 4P43

**19th century French poetry and theatre II: Symbolism**

Symbolist poetry and theatre in France. Authors include Baudelaire, Rimbaud, Verlaine, Mallarmé and Becque.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2F03 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

Credit will not be granted to students who have prior credit in FREN 3F98.

FREN 4P53

**20th century French poetry**

Influence of symbolism, surrealism and cubism. The resistance of language to inner experience and expression. Poetic theory will also be studied. Poems by: Valéry, Claudel, Péguy, Apollinaire, Eluard, Prévert, Char, Saint-John Perse, Michaux, Ponge, Bonnefoy.

*Lectures, 3 hours per week.*

Prerequisites: FREN 2F03 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

FREN 4P54

**20th century French novel from 1950 to the present day**

From the *nouveau roman* to the contem-

## French, Italian and Spanish

porary French novel. Authors studied include Bosco, Robbe-Grillet, Le Clézio, Yourcenar, Tournier. Will also include theoretical essays by these authors and articles by critics.

*Lectures, 3 hours per week.*

Prerequisites: FREN 2F03 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

Credit will not be granted to students who have prior credit in FREN 4F93.

### FREN 4P73

#### French-Canadian poetry

Evolution and tendencies from the late 19th century to the present day. Authors may include Nelligan, Saint-Denys Gameau, Grandbois, Miron, Brossard, Brault.

*Lectures, 3 hours per week.*

Prerequisites: FREN 2F03 or 2F05 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

Credit will not be granted to students who have prior credit in FREN 3P96, 4F85 or 426

### FREN 4P74

#### Contemporary French-Canadian narrative and essay

Novels, short stories and essays from 1960 onwards. Innovative styles and new voices. Social, historical and ideological concerns.

*Lectures, 3 hours per week.*

Prerequisites: FREN 2F03 or 2F05 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

Credit will not be granted to students who have prior credit in FREN 396 or 2F95.

### FREN 4P87

#### Women and writing in Québec (also offered as WISE 4P87)

Texts by women writers of Québec that examine the role of women as writers and subjects. Theoretical and critical perspectives on creative writing. Texts may vary yearly.

*Lectures, 3 hours per week.*

Prerequisites: FREN 2P85 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature or permission of the instructor.

Credit will not be granted to students with prior credit in FREN 3F99.

### FREN 4P88

#### Women and writing in France (also offered as WISE 4P88)

Texts by women writers in France, over the centuries, that examine the role of women as writers and subjects. Theoretical and critical perspectives on creative writing. Texts may vary yearly.

*Lectures, 3 hours per week.*

Prerequisites: FREN 2P86 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature or permission of the instructor.

Credit will not be granted to students with prior credit in FREN 3F99.

### FREN 4P94

#### Advanced French for teachers

For advanced students presently teaching or intending to teach French. The course includes a review of grammar from the teaching point of view, a series of discussions stressing correct pronunciation and expression.

*Lectures, seminars, 3 hours per week.*

Restriction: Consult the instructor regarding permission to register.

Prerequisite: FREN 2F00 or FREN 2F10. Credit will not be granted to students who have prior credit in FREN 4F95.

### FREN 4P97

#### Critical theory and methodology I

The theory of literary criticism from Proust to the Existentialists. Topics studied include psychoanalysis, phenomenology and ideological criticism. Students will conduct advanced bibliographical research.

*Lectures, 3 hours per week.*

Prerequisites: FREN 2F03 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

Credit will not be granted to students with prior credit in FREN 4F98.

### FREN 4P98

#### Critical theory and methodology II

The theory of literary criticism from Structuralism to the present day. Topics studied include semiotics, narratology and deconstruction. Students will conduct advanced bibliographical research.

*Lectures, 3 hours per week.*

Prerequisites: FREN 2F03 and two FREN credits numbered 3(alpha)00 or above, of which at least one is in literature.

Credit will not be granted to students who have prior credit in FREN 4F98.

### FREN 4V60-4V75

#### Special research topics in French literature

These courses are intended to bridge the specific research interests of the members of the department with their teaching at our present most advanced level. From year-to-year the instructor, as well as the content of the course, will vary.

*Lectures, 3 hours per week.*

Prerequisites: Two FREN credits numbered 3(alpha)00 or above.

### ITAL 1F00

#### Language (introductory)

A beginner's course for students with no background in Italian. Acquisition of reading and oral skills, elementary grammar. Conversation and composition.

*Lectures, 3 hours per week, plus language lab.*

Note: Not open to students who have credit in grade 10, 11 or 12 Italian.

### ITAL 1F10

#### Language (introductory, for dialect speakers)

A beginner's course for students with limited background in the Italian language or one of its dialects. Acquisition of reading and oral skills, basic grammar, composition and conversation.

*Lectures, 3 hours per week; plus language lab.*

Prerequisite: Consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in ITAL 1F00 or ITAL 1F80.

### ITAL 1F90

#### Language (intermediate)

Grammar review; emphasis on more complex structures; composition and oral practice. Discussions based on selected literary texts.

*Lectures, 3 hours per week; plus language lab.*

Prerequisite: any one of ITAL 1F00, 1F10, two or more years of high school Italian, OAC Italian or permission of the instructor.

### ITAL 1F95

#### Culture and civilization

(given in English)

The artistic heritage of Italy and the forces--intellectual, political and social--

that have shaped the mentality and way of life of the Italians from the Middle Ages to the present day. Selected texts, slides, records and films.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in ITAL 230.

ITAL 2F00

**Language and literature**

Advanced grammar oral and written practice. Introduction to the analysis of literary texts and principles of criticism.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 1F90 or permission of the department.

ITAL 2F90

**Translation and advanced grammar**

The first part of this course is dedicated to the translation of selected material from business correspondence, magazine articles, essays and literary texts. The second part deals with principles of syntax and style and includes compositions on literary topics.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 1F90.

Credit will not be granted to students who have prior credit in ITAL 290, 299 or 390.

ITAL 2P40

**Literary and cultural movements in Italy**

An overview of the primary theoretical and artistic works that pertain to the following movements: *stilnovismo, umanesimo, rinascimento, barocco, illuminismo, romanticismo* and *decadentismo*.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 1F90.

ITAL 2P92

**Italian theatre and film**

Italy's major playwrights and film directors. Works studied include play by Goldoni and Pirandello and films by De Sica, Fellini, Antonioni and Bertolucci.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 2F00 or permission of the instructor.

ITAL 2P93

**Petrarca and Boccaccio**

Selected poems from Francesco Petrarca's *II Canzoniere* and novellas from Giovanni Boccaccio's *II Decameron*.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in ITAL 3F93.

ITAL 2P95

**Renaissance art and thought**

A survey of Italian Renaissance architecture, painting and sculpture as well as selections from writers such as Alberti, Bembo, De' Medici, Michelangelo, Poliziano and Bruni.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 2F00 or permission of the instructor.

ITAL 3F96

**Dante**

The major focus is Dante Alighieri's *La Divina Commedia* and selections from *La Vita Nuova* and other works.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 2F00.

Credit will not be granted to students who have prior credit in 3F93.

ITAL 3P90

**Italian Romanticism: prose and poetry**

Major texts of the Italian Romanticism, including Manzoni, *I Promessi Sposi*; and selections from Leopardi's *Canti* and the works of Foscolo.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in ITAL 210.

ITAL 3P91

**Literature of the 19th and 20th centuries**

A study of post-Romantic literature with particular emphasis on Verismo and Decadentismo. Authors include: Verga, Pirandello and Svevo.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in ITAL 210.

ITAL 3P94

**The modern novel**

Representative novels from leading modern and contemporary writers such as Moravia, Pavese, Buzzati, Silone,

Vittorini, Calvino, Sciascia.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 2F00 or permission of the instructor.

ITAL 3P95

**Modern Italian poetry**

Major poets and currents of the 20th century. Selections from the Crepuscolari, the Vociani, the Futurists, Saba, Ungaretti, Montale, Quasimodo, the Hermetics, post-Hermeticism.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 2F00 or permission of the instructor.

ITAL 4P05

**Prose of the Italian Renaissance**

Major thinkers and currents of the Italian Renaissance. Prescribed texts include: Machiavelli, *Il Principe*; Castiglione, *Il Cortegiano*.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in ITAL 4F10.

ITAL 4P06

**Poetry of the Italian Renaissance**

Major epic poets of the Italian Renaissance. Prescribed texts include: Ariosto *Orlando furioso*; Tasso, *Gerusalemme liberata*.

*Lectures, 3 hours per week.*

Prerequisite: ITAL 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in ITAL 4F10.

SPAN 1F00

**Language (introductory)**

Essentials of grammar, emphasis on idiomatic expression. Conversation and elementary composition.

*Lectures, 3 hours per week; plus language lab.*

SPAN 1F90

**Language and literature**

Practice in speaking, reading and writing, composition, self-expression. General background of Spanish literature.

*Lectures, 3 hours per week; plus language lab.*

## French, Italian and Spanish

SPAN 2F00

### Language (intermediate)

Oral and written language practice. Discussion of general literary and linguistic topics. Composition and translation. Selected texts.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 1F90.

Note: Provisional registration only: please consult the department.

SPAN 2P10

### Spanish-American literature

Chronological coverage from early times to the present day. Anthology readings.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 1F90.

Credit will not be granted to students who have prior credit in SPAN 2F10.

SPAN 2P11

### Survey of Spanish literature

Introduction to the literature of Spain. Works in their historical and cultural context.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 1F90 or permission of the instructor.

SPAN 2P90

### Translation

The translation of a wide range of material including articles, literature, essays and business correspondence.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in SPAN 2F90.

SPAN 2P91

### Advanced grammar and composition

Analysis of the linguistic logic of the language, principles of syntax and style, compositions on literary and non-literary topics.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in SPAN 2F90.

SPAN 3P92

### Miguel de Cervantes

Humanism and Renaissance in Spain: Cervantes' *Novelas ejemplares* and *Don Quijote de la Mancha*.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in SPAN 3F92.

SPAN 3P93

### The theatre of the Golden Age

Major playwrights of the Golden Age; authors include Lope de Vega, Tirso de Molina, Calderón de la Barca, Ruz de Alarcón.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in SPAN 3F93.

SPAN 3P94

### 20th century Spanish novel

Representative novels from major contemporary writers of Spain such as Cela, Delibes, Cunqueiro, Sánchez Ferlosio, Martín Santos, Benet.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in SPAN 4F25.

SPAN 3P95

### 20th century Spanish-American novel

Major contemporary Spanish-American novelists such as Carpentier, Rulfo, Fuentes, Cortázar, García Márquez, Borges and their main works.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in SPAN 3F95.

SPAN 3P97

### The generation of '98

Spanish writers of the beginning of the 20th century. Authors include: Unamuno, Baroja, Azorín, A. Machado, Valle Inclán.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in SPAN 3F97.

SPAN 3P98

### Spanish post-Romantic novel

Post-Romantic literature with particular emphasis on some of the major works of Benito Pérez Galdos and Leopoldo Alas.

*Lecture, 3 hours per week.*

Prerequisite: SPAN 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in SPAN 3F98.

SPAN 3P99

### Spanish Romanticism: theatre, prose and poetry

Major texts of the Spanish Romantic writers including: Gustavo Adolfo Bécquer, Duque de Rivas, Mariano J. de Larra and José Espronceda.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 2F00 or permission of the instructor.

Credit will not be granted to students who have prior credit in SPAN 3F98.

SPAN 4F00

### History of the language

Origins, approach to phonology, morphology and syntax, dialectal and social influence, evolution in provincial Spanish and Latin America idiomatology.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 2F00 or permission of the instructor.

SPAN 4F10

### Language and literature of the Middle Ages

Grammar and syntax of medieval Spanish. Intensive study of major works. Prescribed texts: *Mío Cid*; Don Juan Manuel, *El Conde Lucanor*; Arcipreste de Hita, *Libro del buen amor*; F. Rojas, *La Celestina*.

*Lectures, 3 hours per week.*

Prerequisite: SPAN 2F00 or permission of the instructor.

## General Studies

Students wishing to pursue a pattern of studies which does not coincide with either a single major or a combined major program may choose a General Studies program.

A General Studies program is offered at both the honors and pass degree levels and must be approved by the dean in whose faculty most of the courses are to be taken. Of the 20 credits required for an honors degree, at least seven credits must be chosen in one subject and five in another. In addition to the normal University requirements, a student must include at least five credits in one subject and three in another as part of the 15 credits required for a pass degree. It should be noted that a maximum of seven credits from any combination of Business, Education, Physical Education, Recreation and Leisure Studies can be included in an honors BA or BSc; within a pass BA or BSc a maximum of five may be taken. Education may only be used as the three credit component and only in a pass degree. An honors degree with Education as a component is not possible.

One credit in a language other than English is required of students who choose a concentration of courses in humanities. All others must include one credit in mathematics or computer science. If students choose courses from the humanities and any of the other faculties, they should consult the dean of the faculty in which the main area of concentration of credits is taken to determine whether one or both of these requirements must be satisfied.

Students electing to pursue a General Studies program should consult with the appropriate dean, the Supervisor, Student Academic Services or an undergraduate program adviser when choosing courses.

Students graduating in a General Studies program will receive a BA if the majority of their courses is in the arts or a BSc if the majority of their courses is in the sciences.

**A typical General Studies program will be as follows:**

### Honors program - BA and BSc

#### *Year 1*

One credit from first area of concentration; two context requirements (see Note 1); one credit from second area of concentration; one elective credit.

#### *Year 2*

Two credits from first area of concentration; one credit from second area of concentration; two elective credits (see Note 2).

#### *Year 3*

Two credits from first area of concentration; one credit from second area of concentration; two elective credits.

#### *Year 4*

Two credits from first area of concentration; two credits from second area of concentration; one elective credit.

#### *Notes:*

1. Normally, the introductory course(s) in the first area of concentration will satisfy either the Humanities, Social Science or Science context requirement. Should this not be the case students must ensure that the third context requirement is satisfied using an elective credit.

2. One credit in a language is required of students who choose a main concentration of courses in Humanities. All others must include one credit in MATH or COSC.

3. A maximum of five credits, in any combination, is permitted from the following areas of study: Business, Recreation and Leisure Studies, Physical Education and Education.

### Pass program - BA and BSc

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

#### *Note:*

1. Education courses may be used only a second concentration and only in a Pass program.



# Geography

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## Officers of instruction

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### Chair

John McNeil

### Professors

John Menzies

Keith J. Tinkler

### Associate professors

Hugh J. Gayler

Alun O. Hughes

John McNeil

Josephine P. Meeker

Anthony B. Shaw

### Lecturers

David A. O. Butz

Katherine J. Miller

### Professor emeritus

John N. Jackson

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## General information

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*Mackenzie Chown, C322*

The Department of Geography offers programs leading to BA and BSc degrees at the honors and pass levels and participates in a number of combined major programs.

Geographers study the distribution of phenomena, physical and human, over the earth's surface and the interrelationships of humans and the natural environment. Their work ranges from description and mapping, through scientific analysis and explanation, to forecasting and planning for the future.

The discipline of geography has a broad scope and combines elements of both the social and natural sciences. Two principal divisions of the subject exist--human geography and physical geography--linked by a common background, a mutual concern for humans and the environ-

ment and a body of related theory and methodology.

Geography majors at Brock may choose from four degree programs: BA Human Geography, BSc Physical Geography, BA Geography and BSc Geography. The first two are relatively specialized, while the last two strike a balance between the physical and human sides of the discipline. Within each program students may be admitted to the honors degree program at any time. An honors degree program provides students with an opportunity for a more intensive examination of issues in the discipline. These programs are described in detail in subsequent sections.

Courses offered by the department fall into two main groups, group A in human geography and group B in physical geography. A third group (C) emphasizes geographical techniques in cartography and related studies.

### Group A:

1F90

2P02, 2P03, 2P06, 2P10

3P43, 3P44, 3P51, 3P52, 3P57, 3P60, 3P72, 3P73, 3P81, 3P83, 3P84, 3P85, 3M90-3M99, 3V60-3V69

4F62, 4F64, 4F67, 4F69, 4F90, 4F99

### Group B:

1F91

2P04, 2P05, 2P09, 2P11

3P10, 3P22, 3P23, 3P24, 3P25, 3P31, 3P32, 3P33, 3P56, 3P81, 3P83, 3M90-3M99, 3V60-3V69

4F11, 4P26, 4P27, 4P28, 4P29, 4P34, 4P35, 4F90, 4F99

### Group C:

2P07

3P01, 3P04, 3P05, 3P07

4P02, 4P03

### Notes:

1. Certain courses (2P07, 3P04, 3P05, 3P07, 3P81, 3P83, 4F99, 4P02, 4P03) can be taken for either BA or BSc credit. GEOG 3P01 can be taken for a BSc credit only.

2. In the case of GEOG 3M90-3M99, 3V60-3V69 and 4F90, the content in a given year determines whether the course yields BA credit or BSc credit.

3. A geography student's major average is computed using all GEOG credits completed, whether group A, B or C.

4. Students may hold credit for only one of GEOG 3P56 or 3P57.

In most courses there is emphasis on practical work. This involves structured labs and seminars in early years and progressively more independent work in later years, culminating in an optional honors thesis in year 4. Field work features prominently in many courses. Two field courses, GEOG 3P56 and 3P57, are held during registration week in early September, with follow-up seminars during term. One of these courses is mandatory for students entering year 3; prospective students must register with the department by April of the preceding academic year. An internship program is available as part of GEOG 4F99 in year 4, enabling students to obtain work experience while still at the University.

Laboratories and equipment are available for work in biogeography, geomorphology, climatology, cartography, surveying, remote sensing, geographical information systems and human geography. The University map library, containing an extensive collection of maps, atlases and airphotos, is housed within the Geography department.

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## Bachelor of Arts in Human Geography

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### Honors program

Eleven and one-half credits in GEOG are required; MATH 1P98; COSC 1P90 or 1P98; two social science credits other than GEOG.

The normal program sequence is as follows:

*Year 1*

GEOG 1F90; GEOG 1F91 (may be taken in year 2); MATH 1P98; COSC 1P90 or 1P98; one humanities and one social science context credit.

*Year 2*

GEOG 2P02, 2P03, 2P06, 2P07, 2P10; one social science credit; one and one-half elective credits (to include GEOG 1F91 if not completed in year 1).

*Year 3*

GEOG 3P57; one-half credit from GEOG 3P60, 3P72, 3P73; one-half credit from GEOG 3P81, 3P83; one-half credit from 3P43, 3P44, 3P51, 3P52, 3P84, 3P85; one-half credit from GEOG 3P04, 3P05, 3P07; one-half credit from any of the above groups; two elective credits.

*Year 4*

GEOG 4F99; three credits from GEOG 4P02, 4P03, 4F62, 4F64, 4F67, 4F69, 4F90 or two credits from this group and one BA credit at the 3(alpha)00 level from groups A and C; one elective credit.

**Pass program**

Seven and one-half credits in GEOG are required; MATH 1P98; COSC 1P90 or 1P98; two social science credits other than GEOG.

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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**Bachelor of Science in Physical Geography**

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**Honors program**

Eleven and one-half credits in GEOG are required; MATH 1P97, 1P98; three science credits from BIOL/BCHM, CHEM, COSC, ERSC, MATH and PHYS (excluding ASTR 1F00, BIOL 1F25, COSC 1P90, 1P98, ERSC 1F90, 2P90, SCIE 1F30 and 3P91). One of

these credits must be at year 2 level or above.

The normal program sequence is as follows:

*Year 1*

GEOG 1F91; GEOG 1F90 (may be taken in year 2); MATH 1P97, 1P98; one humanities and one science context credit.

*Year 2*

GEOG 2P04, 2P05, 2P07, 2P09, 2P11; one science credit; one and one-half elective credits (to include GEOG 1F90 if not completed in year 1).

*Year 3*

GEOG 3P56; one-half credit from GEOG 3P10, 3P81, 3P83; one-half credit from GEOG 3P22, 3P23, 3P24, 3P25; one-half credit from GEOG 3P31, 3P32, 3P33; one-half credit from GEOG 3P01, 3P04, 3P05, 3P07; one-half credit from any of the above groups; one science credit; one elective credit.

*Year 4*

GEOG 4F99; three credits from GEOG 4F11, 4F90, 4P02, 4P03, 4P26, 4P27, 4P28, 4P29, 4P34, 4P35 or two credits from this group and one BSc credit at the 3(alpha)00 level from groups B and C; one elective credit.

**Pass program**

Seven and one-half credits in GEOG are required; MATH 1P97, 1P98; three science credits from BIOL/BCHM, CHEM, COSC, ERSC, MATH and PHYS (excluding ASTR 1F00, BIOL 1F25, COSC 1P90, 1P98, ERSC 1F90, 2P90, SCIE 1F30 and 3P91). One of these credits must be a year 2 level or above.

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

*Note:*

1. ERSC 3P25 may be taken for GEOG credit as GEOG 3P25.

2. For students with a specific interest in geomorphology and soils the following ERSC courses are recommended as elective credits: ERSC 2P31, 3P52, 3P61,

4P41, 4P42 and 4P61.

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**Bachelor of Arts in Geography**

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**Honors program**

Twelve credits in GEOG are required; MATH 1P98; COSC 1P90 or 1P98; two social science credits other than GEOG.

The normal program sequence is as follows:

*Year 1*

GEOG 1F90, 1F91; MATH 1P98; COSC 1P90 or 1P98; one humanities and one social science context credit.

*Year 2*

GEOG 2P10; one credit from GEOG 2P02, 2P03, 2P06; one credit from GEOG 2P04, 2P05, 2P09; GEOG 2P07 or 2P11; one social science credit; one elective credit.

*Year 3*

GEOG 3P57; one 3(alpha)00 level credit in GEOG from group A; one-half 3(alpha)00 level credit in GEOG from group A or group C; one-half 3(alpha)00 level credit in GEOG from group B; one-half credit in GEOG from group B or group C; two elective credits.

*Year 4*

GEOG 4F99; two 4(alpha)00 level credits in GEOG from groups A, B, C; an additional 4(alpha)00 level credit in GEOG from groups A, B, C or one 3(alpha)00 level credit in GEOG from groups A, B, C; one elective credit.

**Pass program**

Eight credits in GEOG are required; MATH 1P98; COSC 1P90 or 1P98; two social science credits other than GEOG.

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

## Geography

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### Bachelor of Science in Geography

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#### Honors program

Twelve credits in GEOG are required; MATH 1P97, 1P98; three science credits from BIOL/BCHM, CHEM, COSC, ERSC, MATH and PHYS (excluding ASTR 1F00, BIOL 1F25, COSC 1P90 or 1P98, ERSC 1F90, 2P90 and SCIE 1F30 and 3P91). One of these credits must be at the year 2 level or above.

The normal program sequence is as follows:

#### Year 1

GEOG 1F90, 1F91; MATH 1P97, 1P98; one humanities and one science context credit.

#### Year 2

GEOG 2P11; one credit from GEOG 2P04, 2P05, 2P09; one credit from GEOG 2P02, 2P03, 2P06; GEOG 2P07 or 2P10; one science credit; one elective credit.

#### Year 3

GEOG 3P56; one 3(alpha)00 level credit in GEOG from group B; one-half 3(alpha)00 level credit in GEOG from group B or group C; one-half 3(alpha)00 level credit in GEOG from group A; one-half 3(alpha)00 level credit in GEOG from group A or group C; one science credit; one elective credit.

#### Year 4

GEOG 4F99; two 4(alpha)00 level credits in GEOG from group A, B, C; an additional 4(alpha)00 level credit in GEOG from groups A, B, C or one 3(alpha)00 level credit in GEOG from groups A, B, C; one elective credit.

#### Pass program

Eight credits in GEOG are required; MATH 1P97, 1P98; three science credits from BIOL/BCHM, CHEM, COSC, ERSC, MATH and PHYS (excluding ASTR 1F00, BIOL 1F25, COSC 1P90 or 1P98, ERSC 1F90, 2P90, SCIE 1F30 and 3P91). One of these credits must be at the year 2 level or above.

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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#### Combined major programs

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The Department of Geography participates in combined major programs with the following departments: \*Biological Sciences (BSc), \*Computer Science and Information Processing (BA and BSc), \*Economics (BA), \*Earth Sciences (BSc), Urban and Environmental Studies (BA and BSc).

The requirements of the programs marked with an asterisk (\*) are listed in the calendar sections of the co-major discipline. The programs with Urban and Environmental Studies are described below.

Combined major programs with other disciplines are also possible; students interested in pursuing one of these should consult the chairs of Geography and of the other department involved.

As in the single major programs, students pursuing a combined major may be admitted to the honors program at any time. The honors program provides students with an opportunity for a more intensive examination of issues in the field.

#### BA Geography and Urban and Environmental Studies

##### Honors program

#### Year 1

GEOG 1F90; UEST 1F90; MATH 1P98; COSC 1P90 or 1P98; one humanities context credit; one science context credit (GEOG 1F91 strongly recommended but students may not use both GEOG 1F90 and 1F91 to fulfil context requirements).

#### Year 2

GEOG 2P10; one and one-half credits from GEOG 2P02, 2P03, 2P06, 2P07; UEST 2F96, 2F97; one elective credit. (Social science context credit if not completed in year 1.)

#### Year 3

GEOG 3P57; one 3(alpha)00 level credit in GEOG from group A; one-half 3(alpha)00 level credit in GEOG from group A or group C; two year 3 UEST credits including at least one of UEST 3V10-3V15, 3V20-3V24, 3V25-3V29 or 3V30-3V34 but excluding UEST 3V80-3V81; one elective credit.

#### Year 4

GEOG 4F99; one 4(alpha)00 level credit in GEOG from group A or group C; either UEST 4F90 and 4F91 or UEST 4F95 and one additional UEST credit.

#### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

#### BSc Geography and Urban and Environmental Studies

##### Honors program

#### Year 1

GEOG 1F91; UEST 1F90; MATH 1P97, 1P98; COSC 1P90 or 1P98; one humanities context credit; one-half elective credit.

#### Year 2

GEOG 2P11; one and one-half credits from GEOG 2P04, 2P05, 2P07, 2P09; UEST 2F96, 2F97; one social science context credit.

#### Year 3

GEOG 3P56; one 3(alpha)00 level credit in GEOG from group B; one-half 3(alpha)00 level credit in GEOG from group B or group C; two year 3 UEST credits including at least one of UEST 3V10-3V15, 3V20-3V24, 3V25-3V29 or 3V30-3V34 but excluding UEST 3V80-3V81; one elective credit.

#### Year 4

GEOG 4F99; one 4(alpha)00 level credit in GEOG from group B or group C; either UEST 4F90 and 4F91 or UEST 4F95 and one additional UEST credit.

Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Prerequisite and restrictions**

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

**Description of courses**

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

**GEOG 1F90**

**Introduction to human geography**

A practical and problem-oriented examination of spatial patterns of human organization and their links with social, economic, political and ecological processes.

*Lectures, lab/seminar, 3 hours per week.*

**GEOG 1F91**

**Principles of physical geography**

The interactions of atmosphere, soils, vegetation and landforms occurring at the surface of the earth. The development of natural environments and their impact upon people and their activities.

*Lectures, lab/seminar, 3 hours per week.*

**GEOG 2P02**

**Principles of economic geography**

An introduction to the principles and processes underlying the patterns of the agricultural, mineral resource, manufacturing and transportation systems and of regional economic disparity.

*Lectures, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 1F90 or consult the instructor for permission to register.

**GEOG 2P03**

**Principles of urban geography**

An introduction to the basic concepts and problems underlying the growth of cities, the urban system, land-use patterns in the city and urban policy making.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 1F90 or consult the instructor for permission to register.

**GEOG 2P04**

**An introduction to meteorology**

The principles, structure, composition and processes of the atmosphere; its energy budget, moisture balance and motion. Weather forecasting in middle and low latitudes, forecasting techniques and special problems in applied meteorology.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 1F91 or consult the instructor for permission to register.

**GEOG 2P05**

**Global geomorphology**

An introduction to geomorphology with an emphasis on basic principles and their application and on local landforms.

*Lectures, lab, field work, 5 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 1F91 or consult the instructor for permission to register.

**GEOG 2P06**

**Cultural geography**

Interactions among culture, society and landscape. The spatial manifestation of culture in the contemporary world.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 1F90 or consult the instructor for permission to register.

**GEOG 2P07**

**Maps and airphotos**

Properties and uses of maps and airphotos. Map making by hand and by

computer. Introduction to surveying, remote sensing and geographical information systems.

*Lectures, lab, field work, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 1F90 or 1F91 or ERSC 1F95 or consult the instructor for permission to register.

**GEOG 2P09**

**Principles of biogeography**

Introduction to the principles of biogeography. Autoecological aspects of soils and plants including the human impact at all scales. Study of the patterns of soils and plants and their explanation. Soil and vegetation systems.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 1F91 or consult the instructor for permission to register.

**GEOG 2P10**

**Qualitative research design and methodology**

Aspects of qualitative research: project formulation, methodologies, writing up; relation of theory and methodology.

*Lectures, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 1F90 or consult the instructor for permission to register.

**GEOG 2P11**

**Research methods in physical geography**

An appraisal of scientific method. Problems of research design and the acquisition of information from the field by mapping, instrumental measurement, sampling and the use of published and unpublished data sources. Quantitative analysis of data, interpretation and the communication of results.

*Lectures, lab, seminar, 5 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisites: GEOG 1F91 and MATH 1P98 or consult the department for permission to register.

## Geography

Credit will not be granted to students with prior credit in GEOG 2P08.

### GEOG 2P91

#### **Geography of Canada**

The analysis of factors underlying the development of Canada's distinctive regions, with emphasis on its major metropolitan areas, resource regions and areas of decline.

*Lectures, seminar, 4 hours per week.*

### GEOG 2P92

#### **Geography of the United States**

Selected aspects of the regional geography of the United States.

*Lectures, seminar, 4 hours per week.*

### GEOG 2P93

#### **Geography of Africa**

Selected aspects of the regional geography of Africa.

*Lectures, seminar, 4 hours per week.*

### GEOG 3M90-3M99

#### **Selected field studies**

The application of geographical principles and techniques to the analysis of field data and problems; background preparation on a selected area, a two week visit to that area and the compilation of reports on the topics studied.

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: completion of all year 1 and 2 requirements in GEOG and consult the instructor for permission to register.

### GEOG 3P01

#### **Topographic surveying**

Principles and techniques of topographic surveying, emphasizing applications in the earth sciences. Use of tape, compass, clinometer, level, plane table alidade, transit, theodolite, tachometer and electronic distance meter. Introduction to CADD software.

*Lectures, lab, field work, 5 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Not open to students with credit in GEOG 3P02hc, 4P01 or 468.

### GEOG 3P04

#### **Map design and production**

The map as a medium of communication. Advanced aspects of map design. Methods of statistical mapping. The preparation of maps for monochrome and color reproduction. Use of mapping and general graphics software on the microcomputer. Issues and trends in cartography. *Lectures, lab, 5 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P07 or permission of the instructor.

Credit will not be granted to students with prior credit in GEOG 4P01.

### GEOG 3P05

#### **Geographical information systems**

The principles and use of computer-based systems for acquiring, storing, manipulating, analyzing and displaying data relating to the earth's surface. Practical work on the microcomputer using raster and vector methods.

*Lectures, lab, 5 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P07 or consult the instructor for permission to register.

### GEOG 3P07

#### **Remote sensing and photogrammetry**

Theory of remote sensing. Photographic, thermal, multispectral and radar imaging from aircraft and satellites. Traditional and digital methods of interpretation and analysis. Photogrammetric mapping. Applications in the earth sciences.

*Lectures, lab, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P07 or consult the instructor for permission to register.

### GEOG 3P10

#### **Applied synoptic climatology**

Studies in selected topics from the fields of bioclimatology, climatic change, hydrometeorology, synoptic climatology. Human impact on the climate will be an important theme.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P04 or consult the instructor for permission to register.

### GEOG 3P22

#### **Principles of geomorphology**

Principles of geomorphology as exemplified by field examples in the Niagara Peninsula. The course is organized around a series of field trips undertaken in laboratory periods. Lectures discuss the field sites visited, review the published literature and develop a chronology of late Quaternary events in the Peninsula.

*Lectures, lab, field work, 5 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisites: GEOG 2P05 and 2P08 or 2P11 or consult the instructor for permission to register.

### GEOG 3P23

#### **Advanced and applied geomorphology**

Selected topics in geomorphology using maps, aerial photographs and the modern journal literature. The application of geomorphological principles to environmental management is developed wherever possible.

*Lectures, lab, field work, 5 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisites: GEOG 2P05 and 2P08 or 2P11 or consult the instructor for permission to register.

### GEOG 3P24

#### **Glacial geomorphology/geology** (also offered as ERSC 3P24)

Introduction to glaciology; glacial processes, glacial deposits: their genesis and sedimentology. Relationship of glacial processes to landforms and surface topography. Glacial systems and facies associations. Applied aspects of glacial geology, e.g., drift exploration.

*Lectures, lab, field work, 5 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P05 or ERSC 2P42 or consult the instructor for permission to register.

## GEOG 3P25

**Pleistocene geology**

(also offered as ERSC 3P25)

Glaciations in the geological record; causes of glaciations; sea level and climate changes; isostatic crustal movements; Quaternary stratigraphy and correlation of glacial and non-glacial events; economic and environmental relationships.

*Lectures, lab, 5 hours per week.*

Prerequisite: GEOG 3P24 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in GEOL 342hc.

## GEOG 3P26

**Glacial soils and sediments**

Applied aspects of glacial deposits. Geotechnical and pedochemical properties and structural attributes of glacial soils and sediments. Micromorphology, glacial soil discontinuity analyses. Introductory aspects of soil mechanics. Drift exploration. Landfill problems and issues related to glacial soils and sediments.

*Lectures, lab, 5 hours per week.*

Prerequisite: GEOG 2P05 or consult the instructor for permission to register.

## GEOG 3P31

**Soil science**

Pedogenesis; processes of profile development. Weathering and soil evolution. Major world soil types, soil taxonomy. Soils of Canada.

*Lectures, lab, 5 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P09 or consult the instructor for permission to register.

## GEOG 3P32

**Biogeography: patterns and processes**

Contemporary controls on plant and animal distributions (ecological biogeography). Past controls/paleo-geographical factors which shaped the distributions of species (historical biogeography), including plate tectonics and Quaternary climate change.

*Lectures, lab, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P09 or consult the instructor for permission to register.

## GEOG 3P33

**Applied biogeography**

Dispersal and migration; adaptation; speciation; extinction; ecological interaction. Species invasion; plant and animal introductions; rates of vegetation change in response to climatic change; habitat fragmentation and application of biogeographical theory to conservation biology; human impacts of fire regimes.

*Lectures, lab, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 3P32 or consult the instructor for permission to register.

## GEOG 3P44

**Urban social geography**

Spatial patterns and social processes relating to individual, group and institutional behavior in the city. Topics to be discussed include: housing, residential mobility, transportation, employment and consumer behavior and their relationship to social class, family status and ethnicity.

*Lectures, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P03 or consult the instructor for permission to register.

## GEOG 3P51

**Human spatial behavior**

A cognitive behavioral approach to human spatial behavior: perception, cognition and evaluation of the environment in spatial decision making.

*Lectures, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P06 or consult the instructor for permission to register.

## GEOG 3P52

**Contemporary issues in social geography**

The spatial distribution of social well-being in Western society: work, housing, crime, gender, race, ethnicity in relation to the underlying structures of inequality, exploitation and alienation.

*Lectures, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified

in BIRT guide.

Prerequisite: GEOG 2P06 or consult the instructor for permission to register.

## GEOG 3P56

**Physical geography field course**

The application of geographical principles and field techniques to problems in physical geography. The course involves field work during registration week in early September, with follow-up readings, seminars and report writing during term. Prospective students must register with the department by April of the preceding academic year.

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: completion of year 2 GEOG requirements in the BSc GEOG (single or combined) programs.

Credit will not be granted to students who have prior credit in GEOG 359hc.

## GEOG 3P57

**Human geography field course**

The application of geographical principles and field techniques to problems in human geography. The course involves field work during registration week in early September, with follow-up readings, seminars and report writing during term. Prospective students must register with the department by April of the preceding academic year.

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: completion of year 2 GEOG requirements in the BA GEOG (single or combined) programs.

Credit will not be granted to students who have prior credit in GEOG 359hc.

## GEOG 3P60

**Geography of transportation**

Geographical aspects of transportation, with particular emphasis on the bases for spatial interaction, networks and flows. The transportation planning process and transportation policy analysis.

*Lectures, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P02 or consult the instructor for permission to register.

## Geography

### GEOG 3P72

#### **Industrial geography**

The spatial patterns of manufacturing industry and the processes which generate those patterns. The study of the locational and structural components of industrial geography.

*Lectures, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P02 or consult the instructor for permission to register.

### GEOG 3P73

#### **The geography of regional disparity**

Spatial aspects of regional disparity in manufacturing and resource industries at the world and national scales: their role in the development of regions, in regional problems and problem regions; evaluation of selected policies to reduce regional disparity.

*Lectures, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P02 or consult the instructor for permission to register.

### GEOG 3P81

#### **Environmental and developmental problems in the Third World**

Interrelationships between physical and human factors and development; poverty and environmental problems; natural resource exploitation and sustainable development; humans as agents of change in desertification, deforestation, soil erosion and environmental pollution and their impact on climate, hydrologic cycle and nutrient cycling processes. Selected studies of regions that are marginal in terms of carrying capacity and ecological fragility.

*Lectures, lab, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 1F90 or 1F91 or consult the instructor for permission to register.

Credit will not be granted to students with prior credit in GEOG 2P94.

### GEOG 3P83

#### **Geography of water resources**

Physical and human factors affecting patterns of use and development of water resources. Emphasis will be on patterns of supply and demand, approaches to development and management of the resource, problems and alternative strategies.

*Lectures, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisites: Any year 2 GEOG credit or permission of the instructor.

### GEOG 3P84

#### **Political geography**

Development of politico-geographic thought. Political organization of space at the local, national and international levels. Regional blocs and supra-national blocs. Strategic areas. Disputed zones and resources. Conflicts of ownership and control.

*Lectures, seminar, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P06 or POLI 1F90 or consult the instructor for permission to register.

### GEOG 3P85

#### **Population geography**

Data sources and methodology in population geography and demography. Spatial variations in the distribution, composition, migrations and growth of populations and their relations with physical, cultural and economic phenomena. Population theories and processes in the spatial context.

*Lectures, lab, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

Prerequisite: GEOG 2P06 or consult the instructor for permission to register.

### GEOG 3V60-3V69

#### **Special topics in geography**

Topics selected from year-to-year on the basis of faculty expertise.

Restriction: Open only to GEOG (single or combined) majors until date specified in BIRT guide.

### GEOG 4F11

#### **Advanced climatology**

Microclimatological investigations in the field and guided reading and discussion of important climatological issues and problems.

*Seminars, lab, field work, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: GEOG 3P10.

### GEOG 4F62

#### **Advanced population geography and demography**

Research themes in population geography and demography with practical applications using Canadian problems.

*Seminars, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: GEOG 2P06 or 3P85 or permission of the department.

### GEOG 4F64

#### **Themes in social geography**

Selected issues and research themes in the spatial organization of well-being.

*Seminars, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: GEOG 3P44 or 3P51 or 3P52 or permission of the department.

### GEOG 4F67

#### **Research themes in industrial geography**

Selected topics and research themes in industrial geography.

*Seminars, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: GEOG 3P72 or 3P73 or permission of the department.

**GEOG 4F69**

**Research themes in urban social geography**

Examination, by means of individual student projects, of aspects of urban social geography and of the spatial behavior of urban residents.

*Seminars, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: GEOG 3P44 or 3P51 or 3P52 or permission of the instructor.

**GEOG 4F90**

**Honors thesis**

An individual research project carried out at the discretion of the department and under the direction of a faculty adviser.

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Consult the department regarding permission to register.

Note: Open only to students in year 4 with second-class honors standing. Students contemplating a thesis should consult with the department at the end of year 3 and must submit a detailed proposal in writing before May 15 prior to entering year 4.

**GEOG 4F99**

**Honors seminar with internship option**

Part I: Seminar in methodology and theory in geography. Research design and techniques. 3 hours per week.

Part II: Either (a) a research problem under the direction of a faculty member or, (b) internship in a government or private agency working under the supervision of that agency on a specific problem.

*Seminars, lab, 8 hours per week for 15 weeks.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of

13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

**GEOG 4P02**

**Topographic science**

The independent study of selected topics in surveying, remote sensing, geographical information systems and cartography.

*Labs, field work, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: two of GEOG 3P01, 3P03, 3P04, 3P05, 3P07.

**GEOG 4P03**

**Advanced cartography**

Readings and discussion of a selected issue in modern cartography or the compilation and design of a map illustrative of a contemporary theme.

*Seminars, lab, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisites: GEOG 3P04 and one of GEOG 3P01, 3P03, 3P05, 3P07 or permission of the department.

**GEOG 4P26**

**Research themes in fluvial geomorphology I**

A survey of modern literature in fluvial geomorphology will be complemented by local field work and the analysis of published river records.

*Seminars, lab, field work, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisites: GEOG 3P22 and either 3P23 or 3P24.

**GEOG 4P27**

**Research themes in fluvial geomorphology II**

A continuation of GEOG 4P26 which will emphasize the morphometric analysis of areas from published maps, computer simulation of river systems and a continued survey of relevant literature.

*Seminars, lab, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: GEOG 4P26.

**GEOG 4P28**

**Advanced glacial sedimentology I (also offered as ERSC 4P28)**

The sedimentology of present day glacial environments and of Quaternary sediments. Thermo-mechanical principles of glacier physics as applied to past and present glacier ice conditions. Glacial lithofacies associations. Glacio-tectonics and diagenesis. Principles of glacial erosion, entrainment and deposition.

*Lectures, lab, field work, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: GEOG 3P24.

**GEOG 4P29**

**Applied glacial sedimentology**

The study of selected topics and research themes in glacial sedimentology with emphasis on applied aspects viz. drift explorations; glacial sediments; groundwater and pollution; geotechnical aspects of glacial sediments; exploration techniques. The course will involve extensive readings, field trips and research work involving laboratory analysis.

*Lectures, lab, field work, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: GEOG 4P28.



## Geography

GEOG 4P34

### **World ecosystems and plant geography**

Vegetation mapping; the study of ecoregions or ecosystems of regional extent; structure and function in terrestrial ecosystems; ecological plant geography and historical plant geography.

*Lectures, lab, field work, 4 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: GEOG 3P32 or 3P33.

GEOG 4P35

### **Vegetation and climate change**

Plant community history; organization of communities past and present. Long-term changes in plant distribution and diversity; topics such as: polar forests of Miocene age; rainforest refugia hypotheses; migration in response to climatic change.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to GEOG (single or combined) majors with a minimum of 13.5 overall credits and either a major average of 70 percent and a non-major average of 60 percent or approval to year 4.

Prerequisite: GEOG 3P32 or 3P33.

# Germanic and Slavic Studies

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## Officers of instruction

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### Chair

John Michielsen  
Barry W. K. Joe (as of July 1, 1993)

### German section

#### Professor

Herbert Schutz

#### Associate professors

Donald C. MacRae  
John A. Michielsen

#### Assistant professor

Barry W.K. Joe

### Russian section

#### Associate professors

Julia A. Frankel  
Clara Hollosi

## General information

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### Mackenzie Chown, A240

For students who have no background in either language, study towards a degree in German or Russian may be started in year 1.

German or Russian can be taken in combination with any other subject in combined major programs.

The Department of Germanic and Slavic Studies offers degree programs in German, Russian, German area studies and Russian area studies.

The department devotes its efforts to literature and language instruction. The language of technology, industry, politics, economics and philosophy is taught utilizing the modern technologies of the Language Learning Centre's audio, video and computer facilities. Computer assisted learning is an integral part of

language instruction in Germanic and Slavic Studies. Students are encouraged to use the computer facilities of the Language Learning Centre for independent study and review. Software is supplied.

The study of German and Russian is also explored in degree programs in German area studies and Russian area studies. In these programs the study of language, literature and culture is complemented by courses in German or Russian history, politics, philosophy, etc., given in English. We believe the German program to be unique in Canada.

Culture and civilization courses which make use of the department's resources in films, slides and tapes are popular options. These courses deal with the major European cultural trends by examining such topics as art and architecture, mythology, cultural and intellectual history.

The department makes arrangements for students' summer travel/study/work in Germany. A German major may obtain credit for a three month stay in Germany under approved conditions.

#### Note:

1. Courses offered in English: GERM 1F96, 1P93, 1P94; RUSS 1F95, 2F10, 2V90-2V99, 3F98.

2. Language courses numbered 1F00, 1P01, 1P02 may not normally be taken by students who have OAC standing or its equivalent in the language.

3. Students registering for GERM or RUSS 1F90 will normally have high school standing in the language or equivalent (GERM 1P01, 1P02 or RUSS 1F00) or permission of the department.

4. GERM courses numbered 3(alpha)00 and above are open to students in years 3 and 4 German and to others by special permission of the department. RUSS courses numbered 2(alpha)90 and above are open to students in year 3 Russian and to others by special permission of the department.

5. The following are primarily language courses: DUTC 1F00; GERM 1F90, 1P01, 1P02; GERM 1F96, 1P93, 1P94, 2F00, 3F99, 4F10; RUSS 1F00, 1F90, 2F97, 3F97.

6. It is to be noted that GERM 1F90, 1P01, 1P02 and 2F00 and RUSS 1F00, 1F90 and 2F00 constitute a sequence. Once credit has been obtained in one of these courses, students are not normally allowed to take for credit or upgrading a course with a lower number in either language. Students admitted to any course numbered 2(alpha)00 or above in GERM or RUSS may not either concurrently or subsequently take a course at the 1(alpha)00 level, except for GERM 1F96, 1P93 and RUSS 1P95.

7. GERM 1P01, 1P02 may be taken for university credit but only credits numbered 1F90 or above may be counted as GERM credits for a major in German.

### Year 2 in Germany

In co-operation with Trent University, the German section of the department offers to those of its students who have GERM 1F90 or its equivalent the opportunity to spend a year of study in Germany at the University of Freiburg, in the Black Forest.

In addition to an immersion program in the German language and courses in German literature, the student is encouraged to select courses in study areas of his or her choice. The program in Freiburg is supervised by a resident director from Trent or Brock familiar with the situation.

## Pass program in one language

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### German

Seven GERM credits numbered 1(alpha)90 or above and ENGL 1F91 are required. Students who intend to pursue courses in German literature are strongly urged to consider one or more of: CLAS 1P91, 1P92, 1P95, 1P97 as a supplement to their studies in German literature.

### Year 1

GERM 1F90 or 1P01, 1P02 (see Notes 2. and 3. above); GERM 1F96 or 1P93, 1P94; one science and one social science context credit; ENGL 1F91 or one elective credit.

## Germanic and Slavic Studies

### Year 2

(i) Students from GERM 1P01, 1P02: GERM 1F90, 2F00; three elective credits, one of which is ENGL 1F91 if not completed in year 1.

ii) Students from GERM 1F90: GERM 2F00, 2P91, 2P92; three elective credits, one of which is ENGL 1F91 if not completed in year 1.

iii) Students in Freiburg: a minimum of two courses from the Freiburg offerings; elective credits to total five. If ENGL 1F91 has not been completed in year 1, it must be taken upon the student's return in year 3.

### Year 3

Year 3 or year 4 GERM credits to total 7 credits 1F90 or above; elective credits (see German area studies below for possible choices). Students are strongly urged to enrol in GERM 3F99 or 4F10 when available.

### Russian

Seven RUSS credits and ENGL 1F91 are required.

### Year 1

RUSS 1F00 or 1F90 (see Notes 2. and 3. above); RUSS 1F95; one science and one social science context credit; ENGL 1F91 or one elective credit.

### Year 2

i) Students from RUSS 1F00: RUSS 1F90; one year 2 level RUSS course; (RUSS 1F95 if not taken in year 1); three elective credits, one of which is ENGL 1F91 if not completed in year 1.

ii) Students from RUSS 1F90: two year 2 level RUSS courses; (RUSS 1F95 if not taken in year 1); three elective credits, one of which is ENGL 1F91 if not completed in year 1.

### Year 3

Three year 3 or year 4 RUSS credits; two elective credits (see Russian area studies below for possible choices). Students are strongly urged to enrol in RUSS 2F97 and 3F97.

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### Pass program: combined major

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Applicable to all languages. At least five GERM or RUSS credits numbered 1(*alpha*)90 or above must be included.

Students who intend to pursue courses in German or Russian literature are urged to consider one or more of CLAS 1P91, 1P92, 1P95, 1P97 as a supplement to their studies in literature.

### Year 1

One credit in the first major: GERM or RUSS; one credit in co-major; ENGL 1F91 will normally be completed in year 1 or year 2. One science and one social science context credit; one elective credit (GERM 1P93, 1P94 or RUSS 1F95 recommended).

### Year 2

Two credits in the first major: GERM or RUSS; two credits in co-major; ENGL 1F91 must be taken if not completed in year 1. One elective credit (GERM 1P93, 1P94 or RUSS 1F95 recommended if not taken previously).

### Year 3

Two credits in the first major: GERM or RUSS; two credits in co-major; one elective credit. All pass programs must contain a minimum of five GERM or RUSS credits (GERM: 1F90 or above; RUSS: 1F00 or above). Three credits must be numbered 2(*alpha*)90 or above.

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### Honors program in German

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At least twelve GERM credits numbered 1F90 or above are required.

### Years 1, 2 and 3

As in pass program in one language.

### Year 4

Year 3 or year 4 level GERM credits not taken in year 3 to total twelve GERM credits numbered 1(*alpha*)90 or above; elective credits (see German area studies below for possible choices). All honors programs must contain a minimum of three credits numbered 3(*alpha*)90 or above.

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### Honors program: combined major

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Applicable to all languages. Seven credits numbered 1(*alpha*)90 (RUSS: 1(*alpha*)00) or above must be taken in each area.

### Years 1, 2 and 3

As in pass program.

### Year 4

Two credits in the first major: GERM or RUSS; two credits in other major; one elective credit. All honors programs must contain a minimum of three credits numbered 3(*alpha*)90 or above.

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### German area studies

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For students who wish to pursue German studies beyond the language and literature orientation as contained in the single and combined major description, the department has co-ordinated a system of courses leading to a bachelor's degree in German area studies. German area studies is a co-ordinated program consisting of the course offerings within the various departments in the University which are pertinent to the study of German, Germany and Europe.

Participating departments: Classics, English Language and Literature, Film Studies, Dramatic and Visual Arts, Geography, German, History, Music, Philosophy, Politics and Psychology.

Responsibility for the program rests with the chair of the department of Germanic and Slavic studies, to whom all enquiries should be directed.

There are various approaches to this program:

(a) a humanities orientation, consisting of courses in Classics, English, Film Studies, Dramatic and Visual Arts, Music and Philosophy chosen to complement the study of German language and literature;

(b) a social science orientation, consisting of a selection of courses in History, Politics and Geography complemented by courses in German language and literature;

(c) a combination of (a) and (b).

#### Honors program

Twelve credits numbered 1F90 or above in German language and literature; eight credits normally chosen from at least three of History, Philosophy, Politics, Classics, English, Film Studies, Dramatic and Visual Arts, Geography, Music, Psychology and Linguistics; one science context credit. All honors programs must contain a minimum of three credits numbered 3(*alpha*)90 or above. ENGL 1F91 will normally be completed in year 1 or year 2.

#### Pass program

Seven credits in German language and literature; seven credits in relevant areas, normally chosen from at least three of History, Philosophy, Politics, Classics, English, Music, Psychology and Linguistics; one science context credit. All pass programs must contain at least three credits from courses numbered 2(*alpha*)90 or above. ENGL 1F91 will normally be completed in year 1 or year 2.

#### Work opportunity: honors or pass program

Three months in Germany, working and travelling. A half credit, GERM 3P98, will be awarded upon receipt of a satisfactory report of 8 weeks' work from the employer involved. A second work opportunity abroad may be used for a further half credit, GERM 4P98.

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#### Russian area studies

For students who wish to pursue Russian studies beyond the language and literature orientation as contained in the single and combined major description, the department has co-ordinated a system of courses leading to a bachelor's degree in Russian area studies. Russian area stud-

ies is a co-ordinated program consisting of the course offerings within the various departments in the University which are pertinent to the study of Russian, Russia and Europe.

#### Participating departments:

Classics, Economics, English, Film Studies, Dramatic and Visual Arts, History, Music, Philosophy, Politics, Psychology and Sociology.

Responsibility for the program rests with the chair of the Department of Germanic and Slavic Studies, to whom all enquires should be directed.

There are various approaches to this program:

(a) a humanities orientation, consisting of courses in Classics, English, Film Studies, Dramatic and Visual Arts, Music and Philosophy chosen to complement the study of Russian language and literature;

(b) a social science orientation, consisting of a selection of courses in History and Politics complemented by courses in Russian language and literature;

(c) a combination of (a) and (b).

#### Pass program

Seven credits in Russian language and literature; seven credits in relevant areas, normally chosen from at least three of Classics, English, History, Linguistics, Music, Philosophy, Politics and Psychology; one science context credit. All pass programs must contain at least three credits from courses numbered 2(*alpha*)90 or above. ENGL 1F91 will normally be completed in year 1 or year 2.

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#### Prerequisite and restrictions

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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#### Description of courses

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

#### DUTC 1F00

##### Introductory Dutch

Learning of basic skills, conversational patterns, reading and writing ability. *Language lab, 3 hours per week.*

#### GERM 1P01

##### Language (introductory I)

Learning of basic skills, conversational patterns, reading ability. Emphasis is on the spoken language/computer laboratory, films, records, tapes.

*Lectures, language/computer, 4 hours per week.*

Credit will not be granted to students with prior credit in GERM 1F00.

#### GERM 1P02

##### Language (introductory II)

Learning of basic skills, conversational patterns, reading ability. Emphasis is on the spoken language, language/computer laboratory, films, records, tapes.

*Lectures and language/computer lab, 4 hours per week.*

Prerequisite: GERM 1P01.

Credit will not be granted to students with prior credit in GERM 1F00.

#### GERM 1F90

##### Language and literature (intermediate I)

Intermediate level. Conversational and written language skills. Introduction to 20th century German literature. Language/computer laboratory, films, tapes, recordings.

*Lectures and language/computer lab, 4 hours per week.*

#### GERM 1F96

##### Culture and civilization of Central Europe: from the Reformation to the post-WWII period (given in English)

The evolution of modern Europe. An illustrated cross section of ethnic, social and cultural peculiarities; development of sovereign states and national cultural centres; a survey of literary, philosophi-

## Germanic and Slavic Studies

cal, political and sociological theses and their implementation or failure.  
*Lectures, 3 hours per week.*

**GERM 1P93**  
**Culture and civilization of Central Europe: from the Prehistoric to the Carolingian period**  
(also offered as CLAS 1P93)  
(given in English)

The cultural development of Central Europe deals with the earliest stone and pottery cultures, the Bronze and Iron Ages, the Celts and Romans and the first Germanic kingdoms. The emphasis is placed on beliefs and practices, artistic style and architecture. Slides are used to illustrate the cultural evidence.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in GERM 195.

**GERM 1P94**  
**Culture and civilization of Central Europe: the Holy Roman Empire**  
(given in English)

Forms of cultural expression in Central Europe from the foundation of the Ottonian Empire to the Counter-Reformation. An illustrated survey of the arts, architecture and literature.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in GERM 195.

**GERM 2F00**  
**Language (intermediate II)**

Intensive study of the present-day German language and cultural background with the aim of increasing the level of the skills of communicating.

*Lectures with extensive use of the language laboratory, 3 hours per week.*

**GERM 2P91**  
**German prose and poetry of the 19th century**

Short works by such authors as Kleist, Hoffmann, Eichendorff, Storm and Hauptmann will be examined as examples of Romanticism, Poetic Realism and Naturalism.

*Lectures, 3 hours per week.*

Prerequisite: GERM 1F90.

**GERM 2P92**  
**German prose and poetry of the 20th century**

Authors to be studied include Kafka, Durrenmatt, Kaschnitz and Lenz. The course touches on the political and literary issues of the 20th century.

*Lectures, 3 hours per week.*

Prerequisite: GERM 1F90.

*Note: To take any courses offered at the year 3 or 4 levels a student must have at least two credits from among GERM 1F90, 2F00 or 2P91, 2P92 or obtain permission of the department.*

**GERM 3F99**  
**Advanced language study I**

The aim of this course is to achieve fluency at an advanced level in speaking, writing and comprehension. Course work includes tapes, films, written and oral projects, discussions and advanced interpreting and translating. It may be taken in either year 3 or 4.

*Lectures, language lab, 3 hours per week.*

Prerequisite: permission of the department.

**GERM 3P98**  
**Practicum in Germany**

A program designed to give students of German and German area studies of all years an opportunity to work for three months in a German firm to acquire practical skills as well as language proficiency. The program may be repeated by students in the honors program only.

Prerequisite: working knowledge of German.

**GERM 3Q91**  
**Romanticism to Vormärz**

Critical theory and literature of the first half of the 19th century. Works by writers such as Novalis, Eichendorff, Kleist, Heine and Büchner.

*Lectures, seminar, 3 hours per week.*

Prerequisite: GERM 2F00 or permission of the department.

**GERM 3Q92**  
**Realism to Naturalism**

Critical theory and literature from the second half of the 19th century. Works by writers such as Hebbel, Fontane, Keller, Storm, Hauptmann and

Wedekind.  
*Lecture/seminar, 3 hours per week.*  
Prerequisite: GERM 2F00 or permission of the department.

**GERM 3Q93**  
**Aufklärung to Sturm und Drang**  
Literature and literary theory from the *Aufklärung* to *Sturm und Drang*. The dramatic literature and criticism of the 18th century from Gottsched to Goethe.  
*Lecture, seminar, 3 hours per week.*  
Prerequisite: GERM 2F00 or permission of the department.

**GERM 3Q94**  
**Sturm und Drang and Classicism**  
Literature of the 18th century from the period of *Sturm und Drang* to Classicism: drama, prose and essays by Goethe and Schiller. Goethe's *Faust* is emphasized.  
*Lecture, seminar, 3 hours per week.*  
Prerequisite: GERM 2F00 or permission of the department.

**GERM 3M90-3M96**  
**Specialized genre studies of representative works in the lyric, the drama or the novel**  
Topics vary yearly.  
*Lecture/seminar, 3 hours per week.*  
Prerequisite: GERM 2F00 or permission of the department.

**GERM 4F10**  
**Advanced language study II**  
The development of greater proficiency in German at a very advanced level of speaking, writing, and comprehension. Course work includes simultaneous translation, written translations, discussions and essays on contemporary issues.  
*Language/computer laboratory, 3 hours per week.*

Prerequisite: GERM 2F00 or permission of the department.

Note: Open to year 3 and 4 students only. Credit will not be granted to students who have prior credit in GERM 499.

**GERM 4P05**  
**German literature of the early 20th century**  
Experiments in form and content in the early 20th century. Works by such writers as T. Mann, Hesse, Remarque and Kafka.

*Lectures, 3 hours per week.*

Prerequisite: permission of the department.

Credit will not be granted to students who have prior credit in GERM 404.

GERM 4P06

**German literature from the 1920s to 1945**

The literatures of Totalitarianism and of the Exile.

*Lectures, 3 hours per week.*

Prerequisite: permission of the department.

Credit will not be granted to students who have prior credit in GERM 404.

GERM 4P07

**German literature from 1945 to 1965**

New forms of poetry, drama and prose: the radio play, the "docudrama" and "reportage".

*Lectures, 3 hours per week.*

Prerequisite: permission of the department.

Credit will not be granted to students who have prior credit in GERM 403.

GERM 4P08

**German literature from 1965 to the present**

Poetry, drama and prose of the contemporary literary scene in Germany. Works by such writers such as Lenz, Kaschnitz, Weiß, Grass.

*Lectures, 3 hours per week.*

Prerequisite: permission of the department.

Credit will not be granted to students who have prior credit in GERM 403.

GERM 4P16

**Tutorial I**

Advanced study in an area of language or literature of mutual interest to the student and the instructor. A written proposal must be approved by the department chair.

*Tutorial, 3 hours per week.*

Prerequisite: permission of the department.

GERM 4P17

**Tutorial II**

Advanced study in an area of language or literature of mutual interest to the student and the instructor. A written proposal must be approved by the department chair.

*Tutorials, 3 hours per week.*

Prerequisite: permission of the department.

GERM 4P98

**Practicum in Germany**

See GERM 3P98.

PLSH 1F00

**Introductory Polish**

Development of the four basic skills in language proficiency (reading, writing, speaking and comprehension).

*Lectures, language lab, 4 hours per week.*

RUSS 1F00

**Introductory Russian**

Development of the four basic skills in language proficiency (reading, writing, speaking and comprehension).

*Lectures, language lab, 4 hours per week.*

RUSS 1F90

**Intermediate Russian**

Conversational and written language skills. Reading of selected texts.

*Lectures, language lab, 4 hours per week.*

Prerequisite: RUSS 1F00 or equivalent.

RUSS 1F95

**Russian culture and civilization**  
(given in English)

Analysis of the influence of religion, fine arts, philosophy and social conditions on the Russian character and culture. Open also to non-majors.

*Lectures, 3 hours per week.*

RUSS 2F10

**19th century Russian literature**

(given in English)

The development of literary traditions vital to Russian cultural and spiritual existence, including the writings of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, and Chekhov.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in RUSS 211, 2P12 or 2P13.

RUSS 2F97

**Advanced Russian I**

Intensive study of present-day Russian through selected texts to increase the

level of comprehension and expression.

*Lectures, 4 hours per week.*

Prerequisite: RUSS 1F90 or permission of the department.

RUSS 2V90-2V99

**Special topics in Russian studies I**  
(given in English)

An exploration of one major period, author or genre in Russian literature and/or art. Topics to be announced by the department.

*Lectures, 3 hours per week.*

**1993-94: (2V94) Russian Realism**

Works by Goncharov, Turgenev, Dostoevsky, Tolstoy.

RUSS 3P96

**Tutorial**

Studies in a selected area of literature or language of mutual interest to the student and instructor. A written proposal must be approved by the department chair.

*Tutorial, 3 hours per week.*

Prerequisite: permission of the department.

RUSS 3F97

**Advanced Russian II**

Systematic coverage of Russian morphology; creative writing and expression; analysis and translation of prescribed texts.

*Lectures, language lab, 4 hours per week.*

Note: Open to year 3 and 4 students only.

RUSS 3F98

**20th century Russian literature**  
(given in English)

Major representatives from the pre-revolutionary, totalitarian and post-war periods. (Gorky, Zamiatin, Bulgakov, Pasternak, Solzhenitsyn, Trifonov).

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in RUSS 3F96, 3P94 or 3P95.

RUSS 3M90-3M94

**Special topics in language or literature**  
(given in English)

Advanced study in language or literature. Topics to be announced by the department.

## Germanic and Slavic Studies

RUSS 4F10

### Tutorial

Studies in a selected area of literature or language of mutual interest to the student and instructor. A written proposal must be approved by the chair of the department.

*Tutorial, 3 hours per week.*

Restriction: Consult the department regarding permission to register.

# Health Studies

## Director

William Montelpare  
Department of Physical Education

The program in Health Studies is offered in response to a growing interest in health-related issues. The curriculum is oriented to the integration of knowledge from several traditional disciplines, focussing on the studies of health maintenance and the change process in the development of good health from a behavioral and biological sciences perspective. The program is one which is both socially oriented and has a strong commitment to basic science.

Health Studies consists of a core of courses supplemented by a broad choice of specific electives which include appropriate selections from within established departments.

Students may be admitted to the BA honors program in Health Studies at any time. This program provides students with the opportunity for a more intensive examination of issues in the field than is offered in the BA pass program. Students in both programs should be careful to select those electives which will prepare them for the career or postgraduate program of their choice. Electives in year 2 and year 3 must be approved by the director of the program.

## Note:

Brock University has entered into an agreement with McMaster University whereby registered nurses who wish to pursue a Bachelor of Science in Nursing degree at McMaster University may earn a number of credits at Brock. Interested students are invited to discuss particulars of this McMaster-Brock co-operative venture with the director of the Health Studies program.

## Honors program

### Year 1

HLST 1F90; PSYC 1F90; science or humanities context credit; two elective credits. (see Note 1)

### Year 2

HLST 2P07; two credits from HLST 2F50, 2P21, 3P07, 3P17; science or humanities context credit; one and one-half elective credits. (see Note 2)

### Year 3

HLST 3P20, 3P21; one and one-half credits from HLST 3P30, 3P31, 3P80, RECL 3P04, 3P30; two and one-half elective credits. (see Note 3)

### Year 4

HLST 4P50, 4P51; one credit from HLST 4F52, PSYC 3P95, 4F50, 4P45; three elective credits. (see Note 4)

## Notes:

1. Suggested electives for year 1: BIOL 1F25, 1F90; CHEM 1P80 and 1P81, CHEM 1P90 and 1P91; COSC 1P90, 1P98, 1P99; ECON 1P91, 1P92; MGMT 1P91, 1P92; PHED 1P92, 1P94; RECL 1P02; UEST 1F90; WISE 1F90; MATH 1P60; SCIE 1F30.

2. Suggested electives for year 2: ACTG 2P11, 2P12; BIOL 2F95, 2P97, 2P98, 3P51; CHST 2F10; LING 2F95; PHED 2P41, 2P97; PSYC 2F12, 2F36, 2P91; SOCI(WISE) 2F21.

3. Suggested electives for year 3: BIOL 3P51; PHED 3P90; PSYC 2P91, 3F46, 3P17, 3P18, 3P94; SOCI 3P26, 3P27, 3P28, 3P57; SOCI(WISE) 3P51.

4. Suggested electives for year 4: BIOL 2P97; PHED 3P90; PSYC 3F46, 3F91, 3P90, 3P92, 3P94, 3P98, 3P99.

## Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

## Prerequisite and restrictions

You must check course descriptions to ensure that you meet prerequisites. Students may be de-registered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

## Description of courses

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

### HLST 1F90

#### Introduction to health studies

Current issues and controversies in the promotion of health. All aspects of the health/wellness continuum will be explored, especially the influence of behavior on biological processes.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to students admitted to HLST until date specified in BIRT guide.

Credit will not be granted to students with prior credit in HLST 1P90.

### HLST 2F50

#### Aspects of human sexuality

Focus on the holistic nature of human sexuality and perspectives on the diversity of viewpoints and values that exist within societies; critical evaluation of research techniques and findings; examination and clarification of attitudes and beliefs concerning one's own sexuality and that of others, as well as present day policies.

*Lectures, seminar, 3 hours per week.*

Prerequisite: HLST 1F90(1P90) or premission of the instructor.

Credit will not be granted to students with prior credit in EXST 2F50.



## Health Studies

### HLST 2P07

#### **Introduction to research designs and evaluation**

(also offered as RECL 2P07)

Principles and techniques for research in recreation and leisure studies/health studies with particular emphasis on issues in the construction, administration and evaluation of data collection as well as the processing and analysis of data.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to HLST (single) or RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: HLST 1F90 or 1P90.

Credit will not be granted to students with prior credit in HLST 2F10.

### HLST 2P21

#### **Health, science and society**

The influence of the biological environment, behavioral, social and economic factors on the health needs of the population. Topics include the measurement of health status, determinants of health and the provision of health care services.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to HLST (single) majors and McMaster-Brock BSc nursing students until date specified in BIRT guide.

Prerequisite: HLST 1F90 or 1P90 or enrolment in the BScN program or permission of the instructor.

Note: Offered only at McMaster University as HTH SCI 3B04. Students take this course on a letter of permission.

### HLST 3P07

#### **Quantitative methods of inquiry**

(also offered as RECL 3P07)

Quantitative means to understand, evaluate and interpret statistical information.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to HLST (single) and RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: HLST(RECL) 2P07.

Credit will not be granted to students with prior credit in HLST 2F10.

### HLST 3P17

#### **Qualitative approaches to inquiry**

(also offered as RECL 3P17)

Theories, approaches, designs, methods and procedures for conducting evaluative analyses.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to HLST (single) and RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: HLST(RECL) 2P07.

### HLST 3P20

#### **Program evaluation**

A comprehensive introduction to the key concepts, methodologies and issues related to program evaluation in health studies. Topics include: administrative and policy implications and technical/methodological evaluation issues facing individuals involved in administering, planning, implementing and evaluating health programs.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to HLST (single) majors until date specified in BIRT guide.

Prerequisite: HLST 2F10.

### HLST 3P21

#### **Nutrition**

An elementary introduction to nutrition with emphasis on diet for health maintenance.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to HLST (single) majors until date specified in BIRT guide.

Prerequisite: HLST 2F10.

### HLST 3P30

#### **Directed readings I**

A program of study not available among the regular course offerings, designed in consultation with the faculty member directing the course. Arrangements must be agreed upon prior to registration.

*1 hour per week plus as needed.*

Restriction: Open only to HLST (single) majors with a minimum of 10.0 overall credits. Consult the instructor regarding permission to register.

### HLST 3P31

#### **Directed readings II**

A program of study not available among the regular course offerings, designed in consultation with the faculty directing the course. Arrangements must be agreed upon prior to registration.

*1 hour per week plus as needed.*

Restriction: Open only to HLST (single) majors with a minimum of 10.0 overall credits. Consult the instructor regarding permission to register.

### HLST 3P80

#### **Clinical and field practices in athletic therapy**

(also offered as PHED 3P80)

Clinical and field skills used in athletic therapy. Emphasis is placed on musculoskeletal assessment of the upper appendage, patient management skills, advanced emergency care, therapeutic modalities, rehabilitation techniques and taping. A clinical internship in the Athletic Injury Clinic is required.

*Lectures, 2 hours per week, internship, 3 hours per week.*

Restriction: Open only to HLST (single) majors with a minimum of 10.0 overall credits until date specified in BIRT guide. Students should consult the instructor regarding permission to register.

Prerequisite: one credit in anatomy.

### HLST 3P81

#### **Clinical assessments in athletic therapy**

(also offered as PHED 3P81)

Functional and surface anatomy of the major joints; the clinical skills used in the assessment of musculo-skeletal injuries related to the lower appendage and lower back. Qualitative posture and gait assessment. Clinical internship is required.

*Lectures, 2 hours per week, intership, 3 hours per week.*

Restriction: Open only to HLST (single) majors with a minimum of 10.0 overall credits until date specified in BIRT guide. Students should consult the instructor regarding permission to register.

Prerequisite: HLST(PHED) 3P80.

HLST 4F52

**Thesis tutorial**

A research project carried out with a faculty adviser. Students must consult the program director regarding both their program and an adviser before being admitted to year 4.

Restriction: Open only to HLST (single) majors with approval to year 4.

Prerequisite: HLST 3P20, 3P21.

HLST 4P50

**Epidemiology**

An investigation of epidemiology of selected diseases with an emphasis on understanding epidemiological methods and identification of risk factors.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to HLST (single) majors with approval to year 4.

Prerequisite: HLST 3P20, 3P21.

HLST 4P51

**Disease processes**

An analysis of various behavioral strategies for the prevention of such diseases as hypertension and lung cancer. The role of behavior in the pathogenesis of disease and the feasibility of behavioral change for the prevention of disease.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to HLST (single) majors with approval to year 4.

Prerequisite: HLST 3P20, 3P21.

# History

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## Officers of instruction

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### Chair

Patricia G. Dirks

### Professors

Frederick C. Drake  
Robert R. Taylor

### Associate professors

Alan G. Arthur  
Patricia G. Dirks  
Craig R. Hanyan  
John A. Sainsbury  
Joseph L. Sanders  
Wesley B. Turner  
Carl M. Wolff

### Assistant professors

Karen Dubinsky  
Jane A. McLeod

### Professor emeritus

John McEwen

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## General information

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### Mackenzie Chown, C421

Historians explore changes in past societies, cultures and peoples. They examine cultural, artistic, political, economic, intellectual, as well as military and national behavior. Their interests range from the history of individuals and local communities to studies of nations and international relations. They analyse the causes and consequences of significant change over time. They seek to illuminate the past.

The study of history involves surveying and gathering evidence and evaluating, interpreting and refining it by constructing clear and logical arguments on the basis of that evidence.

The range of courses offered by the department permits students to plan pass and honors programs in the following fields of history:

1. political and diplomatic
2. social and cultural
3. North American
4. European
5. British and imperial.

To provide a focus for their studies, the department encourages History majors in a pass program to select three of the six HIST courses they will take over years 2 and 3 from within one of the designated fields. Their three other HIST courses may be selected from outside their chosen field. In year 4, honors majors take four history courses within or related to their chosen fields. Students should consult with the chair of the department in arranging acceptable programs.

The department normally offers about 8-10 one credit and 25-30 half credit courses, both lecture and seminar courses, in any one year. Courses not offered in one year are normally offered the following year, so that a two year rotation pattern is in operation.

To assist students in refining their analytical and critical skills, seminars (small discussion groups) are a crucial part of every history course. In many courses individual students are given the responsibility of organizing and leading discussions on particular topics.

### Note:

1. For the purpose of fulfilling context requirements, HIST 1P92 and 1P93 or HIST 1F95 are equally acceptable courses.
2. History majors must take one credit outside of history to satisfy their social science context requirement.

The Department of History recommends combining history with other disciplines in humanities and social sciences, such as Classics, English, languages, Philosophy, Economics, Geography, Politics, Psychology and Sociology.

The department also recommends to students intending to proceed beyond an honors degree in History an advanced course (1F90) in a second language and POLI 2P80 or MATH 1F92.

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## Honors program

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Eleven credits in HIST are required for an honors degree.

### Year 1

HIST 1P92 and 1P93 or 1F95; one social science and one science context credit; two elective credits.

### Years 2 and 3

Six credits in HIST from those numbered 1P92 to 3(alpha)99; four elective credits. Normally, three credits in HIST are taken in each year.

Students who have obtained honors standing in second year may be permitted to take a year 4 course in year 3, especially if it is not expected that the course will be offered the following year. A tentative list of year 4 level courses to be offered in 1994-95 is available in the department.

### Year 4

Four credits in HIST and one elective credit. HIST courses should include two credits numbered 4(alpha)00-4(alpha)99; one credit numbered 3(alpha)90 or above; one other credit in HIST. The courses chosen must be approved by the department chair or designate, as comprising an acceptable program. Students may substitute a lower level course for one of those required in year 4, if they have taken a credit numbered 3(alpha)90 or above in year 3.

Each year, a student's program must be approved by the department.

Second-year students may take year 3 courses with permission of the instructor, apart from courses numbered 3(alpha)90 or above which are restricted to students with at least three year 2 credits or special permission of the instructor.

### Language requirement for humanities majors

History majors are required to complete one credit in one language other than English to fulfill the Humanities language requirement. Where half credit

courses are used to satisfy the requirement, both half credits must be in the same language. The History department recommends a 1(alpha)00 level credit in French, German, Italian, Latin, Russian or Spanish; see page 32 for details of the language requirement for humanities majors.

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### Pass program

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Seven credits in HIST are required for a pass degree.

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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### Combined major programs

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The Department of History participates in combined major programs. In such programs, the candidate for a pass degree shall take a minimum of five credits in HIST and the candidate for an honors degree a minimum of seven credits in HIST. Normally, a pass student will take three HIST credits numbered 1(alpha)90 and above and two credits numbered 2(alpha)90 and above; an honors student will normally take two additional credits numbered 3(alpha)90 and above.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

#### HIST 1F95

##### World history since 1914

The major political, social, economic and cultural trends of the 20th century, with prime focus on developments in Europe and the way they have affected the rest of the world, although stress will also be placed on the decline of Europe in global political and economic terms. Specific topics include: the world wars, the Russian Revolution, fascism, the Holocaust, the Cold War, decolonization and conflict and its resolution in the international, political and social spheres.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 191.

#### HIST 1P92

##### Early medieval Europe

The societies and culture of Western Europe from the late Roman Empire until the Crusades and the 12th century Renaissance. The agricultural base of society, its cultural context, the nature and roles of early Christianity and the ultimate survival and expansion of Christendom in the face of both pagan and Muslim challenges will be analysed.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 190.

#### HIST 1P93

##### The high Middle Ages

The economy, society, culture and politics of Western Europe, 1050-1350. Ecclesiastical problems, religious beliefs, scholasticism, material culture and family structures will all be assessed in the context of urban and mercantile expansion.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 190.

#### HIST 2F97

##### From colonies to colossus

The United States in the years from the Revolution to the war with Spain. The turmoil of 19th century American politics and the foundations of the economic strength of the United States. Elements of American social life probed include the relations between the sexes, the burden of slavery, the surge of interest in sports, the transformation of education, changes in the treatment of the poor and

the emergence of the learned professions.

*Lectures, seminar, 3 hours per week.*

#### HIST 2F98

##### The promises of the "American Century"

Beginning with the depression of the 1890s, the effort of Americans to establish social and economic justice in an advanced industrial economy. Topics covered include: Progressivism, the development and the deterioration of the New Deal, the American presidency in the Vietnam years, the changing culture of suburbia, the feminist revolt, the transformation of race relations and the attempt to make the United States a non-alcoholic country.

*Lectures, seminar, 3 hours per week.*

#### HIST 2P07

##### Origins: Canadian history to 1800 (also offered as CANA 2P07)

Social, economic, political and cultural developments in Canada from earliest French contacts to the end of the 18th century.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 2F09.

#### HIST 2P08

##### Canada from 1800 to Confederation (also offered as CANA 2P08)

The main social, economic, political and cultural developments in eastern Canada in the first sixty years of the 19th century.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 2F09.

#### HIST 2P09

##### Canada from confederation through World War I

(also offered as CANA 2P09)

The evolution of Canada's political economic and social structures from the Confederation era to 1920.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students with prior credit in HIST(CANA)2F10.

#### HIST 2P10

##### Canadian history since World War I (also offered as CANA 2P10)

An examination of economic, social and political themes and events in Canadian

## History

history since 1920. Particular attention will be paid to the ways in which class, gender, region and race/ethnicity have been significant forces in Canada's past. *Lectures, seminar, 3 hours per week.* Credit will not be granted to students with prior credit in HIST(CANA)2F10.

### HIST 2P21

#### **Early modern Britain**

The British Isles in the 15th and 16th centuries, emphasizing the emergence of the centralized state, the impact of religious reformation and the achievements of the Elizabethan age.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 220.

Note: This course is the normal prerequisite for HIST 2P22.

### HIST 2P22

#### **Century of revolution**

The origins and effects of revolution and civil war in 17th century Britain.

*Lectures, seminar, 3 hours per week.*

Prerequisite: HIST 2P21 or permission of the instructor.

Credit will not be granted to students who have prior credit in HIST 220.

### HIST 2P30

#### **Renaissance Europe, 1300-1500**

An examination of some of the more problematic shifts and continuities in Western European society in an age of demographic crisis and economic dislocation. Family structures, technological innovation, elite and popular culture will be emphasized.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 232hc.

### HIST 2P31

#### **Europe during the Reformation, 1480-1600**

The economic, demographic and political environment within which Luther, Calvin and other innovators attempted to reform Europe's religious life. Political and mercantile change and overseas expansion will also be discussed.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 233hc.

### HIST 2P34

#### **Europe during the Iron Century, 1600-1715**

A survey of European culture and society during the 'Little Ice Age' in which economic and political readjustments are considered in the context of philosophical speculation, the development of scientific thought and the concurrent maintenance of antecedent religious and intellectual traditions.

*Lectures, seminar, 3 hours per week.*

### HIST 2P41

#### **18th century Europe, 1715-1789**

Demographic, economic and structural changes as they affected the nobility, bourgeoisie and popular classes; changes in patterns of criminality, riot and popular mentality; war as a stimulus of social reform; and the Enlightenment in its social and cultural context and the origins and course of the French Revolution.

*Lectures, seminar, 3 hours per week.*

### HIST 2P42

#### **Revolutionary Europe, 1789-1815**

An examination of the French Revolution and its European impact, emphasizing its origins, its role in the development of European political culture and its impact on the experience of women. Such topics as the failure of the constitutional monarchy and the counter-revolution will also be addressed.

*Lectures, seminar, 3 hours per week.*

### HIST 2P51

#### **Europe's greatest century: 1815-1914**

Political, social and cultural changes in the subcontinent when liberal, imperialist and industrializing Europe was still master of the world. The 1848 revolutions; the effects of nationalism, such as the unification of the German and Italian states and the problems of the eastern Empires, Austria-Hungary and Russia, are some of the topics covered.

*Lectures, seminar, 3 hours per week.*

### HIST 2P52

#### **Europe from ruin to recovery: 1914-1972**

The fall and division of Europe stressing the effect of competing ideologies, two great wars and economic turmoil on political, social and cultural affairs. Some of the problems discussed include: Sta-

lin's Russia, the Nazi movement, the Holocaust, the Gaullist phenomenon and the Prague Spring of 1968.

*Lectures, seminar, 3 hours per week.*

### HIST 2P80

#### **The Thirteen Colonies, 1585-1700**

English colonies to colonial provinces. A comparative survey of the founding of England's North American colonies in the 17th century. Emphasis will be on subjects such as Virginia's tobacco culture, New England Puritanism, rebellions in the 1670s and 1680s, slavery and witchcraft.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 2F80.

### HIST 2P81

#### **The Thirteen Colonies, 1700-1776**

From colonial provinces to revolutionary states. A comparative survey of the growth of colonial societies, the growth of political institutions, the impact of Europe's warfare on colonial life, urban growth, the movement towards revolution against Britain and the war of independence.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 2F80.

### HIST 2P90

#### **Piety, dissent and reform: the roots of the Reformation**

The personal, collective, institutional and cultural religious forces which underlay the various efforts to revitalise and reform the Christian Church between 1300 and 1530. The early years of the Protestant Reformation will be examined in this context. Differing movements will be compared and contrasted, in part through an examination of primary texts. Related topics like humanist philosophy and esoteric beliefs will also be considered.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 2P96.

### HIST 2P91

#### **The course of the Reformation**

The fragmentation of a united Western Christendom, the development of new theological positions and diverging denominational frameworks and their ef-

fects on the lives of ordinary people. The various new churches will be compared and contrasted. Primary texts will be examined and ancillary social and cultural developments like the witch-craze and poor relief reform will be considered. *Lectures, seminar, 3 hours per week.* Credit will not be granted to students who have prior credit in HIST 2P96.

#### HIST 2P93

##### **Foundations of modern Japan**

Japanese history from the fall of the Tokugawa shogunate to 1953. Some attention will be given to Tokugawa Japan, but the main emphasis will be on the major post-1867 socio-economic, political and intellectual developments which help explain Japan's emergence as a major power.

*Lectures, seminar, 3 hours per week.*

#### HIST 2P94

##### **Canada's evolving social fabric**

The changing nature of the social institutions fashioned for and by the men, women and children who peopled Canada during the nation's first century. *Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 3P76.

#### HIST 2P99

##### **Ideas and culture, 1700-1850**

Intellectual and cultural developments in Europe and North America during the 18th and early 19th centuries, with particular attention to the exchange of ideas across the Atlantic. Developments in literature and the arts will be considered, as well as the relationships between high and low culture.

*Lectures, seminar, 3 hours per week.*

#### HIST 3F24

##### **Britain in the 20th century**

From liberal democracy to welfare state: the coming of total war and its impact upon the political, social, economic and cultural life of Britain.

*Lectures, seminar, 3 hours per week.*

#### HIST 3F50

##### **The German experience, 1848-1961**

Emphasis on social, economic and political problems.

*Lectures, seminar, 3 hours per week.*

#### HIST 3F70

##### **Russia, 1462-1801**

Muscovite and early imperial Russian history with emphasis on the social, economic and political problems which accompanied Russia's emergence as a modern state.

*Lectures, seminar, 3 hours per week.*

#### HIST 3F90

##### **Russia, 1801-1917: the road to revolution**

The last period of imperial Russian history with emphasis on the political, socio-economic and intellectual contexts out of which came the revolutions of 1917.

*Lectures, seminar, 3 hours per week.*

#### HIST 3F91

##### **The experience of Empire**

Imperialism, power and nationalism in the British Empire during the 19th and 20th centuries, with emphasis on African territories, Australia, Canada and New Zealand.

*Lectures, seminar, 3 hours per week.*

#### HIST 3F92

##### **Russia in the 20th century: the Soviet Union**

The USSR from 1917. Attention will be given to internal developments: the consolidation of the Soviet regime, the Stalin revolution, the post-Stalin era and changes in Soviet or Russian society since 1917; also certain aspects of foreign policy will be explored.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 3P72.

#### HIST 3F94

##### **Power in America**

Aspects of the political development of the United States from the American Revolution to the present. Attention will be given to the development of the American party systems, the political interaction of the federal, state and local levels of government and to the changing behavior of the American voter.

*Seminars, 3 hours per week.*

Prerequisite: one of HIST 2F80, 2F97, 2F98 or permission of the department. Credit will not be granted to students with prior credit in HIST 3F85.

#### HIST 3P00

##### **Ideas and culture since 1850**

The concerns of this course will be similar to those of HIST 2P99, but with reference to the later 19th and 20th centuries.

*Lectures, seminar, 3 hours per week.*

#### HIST 3P21

##### **The first industrial nation: 18th century Britain**

British politics, society and culture in the early stages of the industrial era.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 322.

#### HIST 3P23

##### **The first industrial nation: 19th century Britain**

British politics, society and culture during the climactic period of the first industrial revolution.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 322.

#### HIST 3P40

##### **France, 1815-1914: French social history between the Revolution and World War I**

Special emphasis on the social consequences of industrialization and urbanization. Specific topics will include the effects of railway building, increased literacy and expansion in the book trade and the changing role and experience of women.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 3P41 or 3P42.

#### HIST 3P73

##### **Canadian business since 1900**

The main developments in the history of Canadian business since 1900, focussing on themes including industrialization and its consequences, labor and immigration, the effects of war on Canadian business and the relationship between business and government.

*Lectures, seminar, 3 hours per week.*

#### HIST 3P74

##### **Canada, a land of immigrants**

Immigrants, immigration movements, problems of adjustment and government policies, concentrating on the period up to World War II.

## History

*Lectures, seminar, 3 hours per week.*  
Prerequisite: a previous university level Canadian history course or permission of the instructor.

### HIST 3P75

#### **Canadian labor history**

(also offered as LABR 3P75)

A survey of the history of Canadian workers and the labor movement, from the mid-19th century to the present, combining studies of trade unions with the broader context of the social, community and political life of workers. Particular attention will be paid to how gender and race/ethnicity have shaped the experience of the working class in Canada.

*Lectures, seminar, 3 hours per week.*

### HIST 3P81

#### **The Northeast in the Old Republic**

The political, social and economic development of northeastern states of the United States, such as Massachusetts, Pennsylvania and New York, up to the 1840s.

*Seminars, 3 hours per week.*

Prerequisite: one of HIST 2F80, 2F97, 2P80, 2P81 or permission of the department.

### HIST 3P82

#### **The North Atlantic triangle**

The relationship of warfare, diplomacy and the treaty-making processes affecting the United States, Great Britain and Canada in the period from the American Revolution to the Treaty of Washington, 1776-1871.

*Lectures, seminar, 3 hours per week.*

### HIST 3P92

#### **Selected aspects of Upper Canada/Ontario history, 1784-1914**

Specific themes in the social, cultural, political and economic history of Upper Canada/Ontario. Topics may include: native peoples, immigration and settlement, urban development, political development, warfare, the rise of industry, crime and punishment, health and medicine, social problems, the writing of provincial and local history.

*Lectures, seminar, 3 hours per week.*

Prerequisite: a previous university level Canadian history course or permission of the instructor.

### HIST 3P93

#### **Literacy, culture and typography in Europe, 1300-1600**

The shift from script to print, the gap between high and low cultures and the cosmology of the Early Modern period. The consequences of typography for scholars, writers, governments and ordinary people.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 3F96.

### HIST 3P95

#### **United States foreign policy: from Revolution to Civil War, 1776-1861**

Problems of foreign policy in a revolution, alliance politics, problems of early foreign policy makers, the interaction of domestic and foreign affairs, especially territorial and commercial expansion, hemispheric policies and the foreign policy of the fracturing Union.

Prerequisite: one of HIST 2F80, 2F97, 2P81 or permission of the instructor.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in HIST 3F95.

### HIST 3P96

#### **United States foreign policy: from Civil War to World War I, 1861-1918**

The foreign policy of the New Empire. The continuing themes underpinning pre- and post-Civil War, United States foreign policy from Seward to Wilson, dealing with such topics and commercial expansion, the "New Empire", the lure of the Pacific, the Spanish-American War, Open Door and World War I.

*Lectures, seminar, 3 hours per week.*

Prerequisite: one of HIST 2F80, 2F97, 2F98, 2P81, 3P95 or permission of the department.

Credit will not be granted to students who have prior credit in HIST 3F95.

### HIST 3P97

#### **United States foreign policy: the 20th century colossus**

The foreign policies of the United States towards other powers in Asia, the Pacific, Europe and the Americas, from Wilson to Bush, World War I and II, the impact of 20th century warfare on diplomacy, the arms race, the Cold War and the "New World Order".

*Lectures, seminar, 3 hours per week.*

Prerequisite: one of HIST 2F97, 2F98, 3P95, 3P96 or permission of the department.

Credit will not be granted to students who have prior credit in HIST 3F95.

### HIST 3P98

#### **French Canada**

A study of the cultural, economic and political institutions of French Canada as a means of analysing the sources of French-English conflict with emphasis upon such questions as education, cultural values, imperial defense and conscription.

*Lectures, seminar, 3 hours per week.*

### HIST 4F99

#### **Honors tutorial**

Directed reading and discussion in the student's selected field in preparation for a comprehensive examination. Honors students who are interested in this course may begin their reading for HIST 4F99 in their third-year.

*Hours to be arranged.*

Restriction: Open only to HIST (single or combined) majors with approval to year 4.

Prerequisites: fourth-year standing and permission of the department. Students must make arrangements before the end of April for tutorials to begin the following school term.

### HIST 4V10-4V19

#### **Problems in Canadian history**

Studies of selected problems in different eras of Canadian history. Topics studied in any given year will focus on a particular theme.

#### **1993-94: (4V11) Canada's relations with the British Empire and Commonwealth**

Canada's relations with Great Britain and other Commonwealth countries from the mid-19th century including the development of Canadian nationhood. Topics may include: imperial defence, Canada's involvement in war, immigration and treaty-making powers.

*Seminars, 3 hours per week.*

Restriction: Open only to HIST (single or combined) majors with approval to year 4.

Prerequisite: approval to year 4 or permission of the department.

**1993-1994: (4V13) Canadian women's history**

This course will survey the social, economic and political activities of women in Canadian history, concentrating on the late nineteenth century and the twentieth century. Particular attention will be paid to ethnic/racial and class variations in women's experience.

*Seminars, 3 hours per week.*

Restriction: Open only to HIST (single or combined) majors with approval to year 4.

Prerequisite: approval to year 4 or permission of the department.

**HIST 4V20-4V29****Problems in United States history**

Studies of selected problems and topics in United States history.

**1993-1994: (4V20) The Republic forms: the political life of the early national years of the United States**

The development of the political institutions of the United States from the Revolution to the 1840s. Topics include: the development of American Republican ideology, the movement for the Constitution of 1787, the emergence of parties and the development of the "second party system".

*Seminars, 3 hours per week.*

Restriction: Open only to HIST (single or combined) majors with approval to year 4.

Prerequisite: approval to year 4 or permission of the department.

Credit will not be granted to students with prior credit in HIST 4P17.

**1993-94: (4V21) The American Civil War**

Causes, progress and results of the Civil War in the United States. Topics may include: Union and Confederate military, naval, diplomatic, financial, racial, political and social aspects of the struggle.

*Seminars, 3 hours per week.*

Restriction: Open only to HIST (single or combined) majors with approval to year 4.

Prerequisite: approval to year 4 or permission of the department.

**HIST 4V30-4V39****Problems in European social and political history**

Studies of selected problems, topics and periods in European social and political history from the 15th to the 20th centuries, with particular attention to developments pertaining to France, Germany, Great Britain and Russia. Countries covered will vary from year-to-year.

**1993-1994: (4V31) The rise of national socialism in Weimar Germany**

An analysis of the courses of Nazism's growth, 1919-1933.

*Seminars, 3 hours per week.*

Restriction: Open only to HIST (single or combined) majors with approval to year 4.

Prerequisite: approval to year 4 or permission of the department.

**1993-1994: (4V36) A European history course**

Title and course description available from the department.

*Seminars, 3 hours per week.*

Restriction: Open only to HIST (single or combined) majors with approval to year 4.

Prerequisite: approval to year 4 or permission of the department.

**HIST 4V40-4V49****Problems in European intellectual and cultural history**

Studies in selected problems, topics and periods in European cultural and intellectual history.

**1993-94: (4V40) From Romanticism to neo-Romanticism**

Problems in the thought and culture of Europe from the late 18th to the early 20th centuries, including special consideration of the role of literature and to the music in the culture of the period.

*Seminars, 3 hours per week.*

Restriction: Open only to HIST (single or combined) majors with approval to year 4.

Prerequisite: approval to year 4 or permission of the department.

Credit will not be granted to students with prior credit in HIST 4P45.



# Humanities Interdisciplinary Studies

Director  
TBA

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## General information

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*Schmon Tower 401D*

HUMA courses are special interdisciplinary offerings which draw upon faculty resources from at least two departments within the Faculty of Humanities. Such courses are intended to enrich the academic experience of students from diverse disciplines who wish to explore topics and ideas in a context which is broader and thus far more integrated than investigation within a single department can provide.

Such courses can be taken as electives in any degree program.

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## Description of courses

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**Please note that none of these courses will be offered during the 1993-94 academic session.**

HUMA 2F90

### **Romanticism**

An interdisciplinary study of European Romanticism; historical background; philosophical, artistic, musical and literary theory pertinent to the movement, analysis of representative texts; national manifestation of the phenomenon.

*Lectures, seminar, 3 hours per week.*

Prerequisite: one humanities context credit.

HUMA 2F91

### **The shaping of 20th century Western culture**

An interdisciplinary study of significant events, movements, texts and ideas in the Western world during the past one hundred years.

*Lectures, seminar, 3 hours per week.*

HUMA 2F95

### **General and literary semiotics**

An interdisciplinary examination of the theory of code and sign production taking into account language, aesthetics and behavior. Particular emphasis will be put on the semiotics of poetry, fiction and theatre.

*Lectures, seminars, 3 hours per week.*

Prerequisite: one humanities context credit.

## Integrated Studies

Students wishing to pursue a pattern of studies which does not coincide with either a single major or a combined major program may choose an Integrated Studies program.

An Integrated Studies program is offered at both honors and pass levels for students whose special interests cannot be accommodated by a major, combined major or General Studies program. A student choosing an Integrated Studies program must receive prior approval for such a program or any subsequent changes to an approved program from the appropriate dean.

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### Program requirements

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An Integrated Studies program which involves only two subject areas for which a combined major is available may not be taken, nor is it possible to pursue an Integrated Studies program in Education.

A student electing to pursue an Integrated Studies program must maintain second-class honors standing in order to continue in the program and to graduate. Additionally, an Integrated Studies program must include an appropriate credit in mathematics or computer science if the pattern of studies includes an emphasis in science or social science or a credit in a language (in accordance with the language requirement of the Faculty of Humanities) if the pattern of studies includes an emphasis in the humanities. Both may be required where circumstances warrant. When choosing a program, students should take care that prerequisites for advanced courses are met and that the schedule for cycled courses be considered.

A typical example of an Integrated Studies program is the BA (Honors) program in Canadian and European Community Studies.

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### BA Integrated Studies in Canadian and European Community Studies

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The program is offered only as a four-year honors program leading to the degree of Bachelor of Arts (BA) in Integrated Studies in Canadian and European Community Studies. Only students who have obtained a 70 percent overall average in year 2 may proceed to years 3 and 4.

Students will be required to pass an oral proficiency test in either French or German prior to graduation. Competence in both languages is strongly recommended.

One credit in FREN and GERM at the 1F90 level or above must be taken in years 1 and 2. At least two credits in either FREN or GERM, numbered 2(*alpha*)90 or above, must be taken during years 3 and 4.

Students must fulfil the University's context requirements.

Of the remaining credits, at least five must have European content and five must have Canadian content. A minimum of six credits must be taken in either HIST or POLI, including a year 4 honors research credit. Students should consult the Dean of Humanities regarding course selection.

#### *Note:*

Students enrolled in the program are invited to participate in the study year in Germany at the University of Freiburg, West Germany and are eligible for the practicum in Germany (GERM 3P98, 4P98). Both opportunities are offered by the Department of Germanic and Slavic Studies. Students may also avail themselves of the many summer programs offered by universities in Québec and France.

#### Prerequisites:

Either OAC French (or FREN 1P01, 1P02) or German (or GERM 1P01, 1P02). FREN 1P01, 1P02 or GERM 1P01, 1P02, or both, may be taken in year 1.

# Labor Studies

## Director

Felice F. Martinello

## Participating faculty

June Corman, Sociology  
Ann D. Duffy, Sociology  
Daniel G. Glenday, Sociology  
Felice Martinello, Economics  
Roberta E. Robb, Economics  
Garth Stevenson, Politics

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## General information

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### Taro Hall 465

Work affects our lives. It determines how we spend many of our waking hours and it largely defines our position in society, our economic well being and our self-image. From a more general point of view, the nature of our society and economy is determined by the sum of the work efforts of the individuals in our society. Restructuring of the labor force, technological change, deskilling, reskilling, changing labor legislation, labor market segmentation, women's work and equality in the workplace are some of the issues that stimulate teaching and research in Labor Studies.

Given the complex and multifaceted nature of work, Labor Studies adopts a multidisciplinary approach to the study of work. Labor Studies is a combined major program leading to a pass BA degree. The program provides a broad social science perspective to the study of work with the participation of the department of Economics, History, Politics and Sociology.

Visiting speakers are invited from the community, the labor movement, the legal profession, employer organizations and other colleges and universities to give talks and lead discussions. These talks address issues of current interest and give students the opportunity to meet practitioners and participating faculty.

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## Pass program

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Students wishing to major in Labor Studies must declare a combined major with either Economics, Politics or Sociology.

### Economics and Labor Studies (See Note below)

#### Year 1

LABR 1F90; ECON 1P91, 1P92 and one of POLI 1F90 or SOCI 1F90; one science and one humanities context credit.

#### Year 2

LABR 2P15; ECON 2P21, 2P22, 2P31, 2P32, 2P90; MATH 1P98; one credit from LABR; one-half elective credit.

#### Year 3

LABR 3F00; ECON 3P24, 3P25; two LABR credits, at least one at the 2(alpha)90 level or above; one elective credit.

### Politics and Labor Studies (See Note below)

#### Year 1

LABR 1F90; POLI 1F90 and one credit from ECON 1P91, 1P92 or SOCI 1F90; one science and one humanities context credit.

#### Year 2

POLI 2P01, 2P80; LABR 2P15 or 2P34; one credit in POLI at the year 2 level; one and one-half credits from LABR; one elective credit.

#### Year 3

LABR 3F00 and 3P33 or 3P65; one and one-half credits in POLI at the year 3 level; one LABR credit at the 2(alpha)90 level or above; one elective credit.

### Sociology and Labor Studies (See Note below)

#### Year 1

LABR 1F90; SOCI 1F90 and one credit from ECON 1P91, 1P92 or POLI 1F90; one science and one humanities context credit.

#### Year 2

SOCI 2F01, 2F10; LABR 2P32, 2P34; one credit from LABR; one elective credit.

#### Year 3

LABR 3F00; SOCI 3F01; one credit in SOCI at year 3 level; one LABR credit at the 2(alpha)90 level or above; one elective credit.

#### Note:

At least one of the two credits required from the Labor Studies course list must be from outside the student's disciplinary major.

## Labor Studies course list

- |           |  |
|-----------|--|
| ECON 2F95 | Canadian economic policy (also offered as LABR 2F95)       |
| ECON 2P09 | Canadian economic history (also offered as LABR 2P09)      |
| ECON 2P15 | The economics of unions (also offered as LABR 2P15)        |
| ECON 3P24 | Labor economics (also offered as LABR 3P24)                |
| ECON 3P25 | Topics in labor economics (also offered as LABR 3P25)      |
| HIST 3P75 | Canadian labor history (also offered as LABR 3P75)         |
| POLI 3F51 | Canadian public administration (also offered as LABR 3F51) |
| POLI 3P33 | The state and economic life (also offered as LABR 3P33)    |
| POLI 3P65 | Introduction to public policy (also offered as LABR 3P65)  |
| SOCI 2P32 | The sociology of work (also offered as LABR 2P32)          |
| SOCI 2P34 | Sociology of trade unions (also offered as LABR 2P34)      |

- SOCI 3P30 Sociology of women and work (also offered as LABR 3P30 and WISE 3P30)
- SOCI 3P31 Complex organizations (also offered as LABR 3P31)
- SOCI 3P34 Information technology and work (also offered as LABR 3P34)
- SOCI 3P66 Social movements (also offered as SOCI 3P66)
- WISE 3P30 Sociology of woman and work (also offered as LABR 3P30 and SOCI 3P30)

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**Prerequisite and restrictions**

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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**Description of courses**

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

**LABR 1F90**

**Introduction to labor studies**

The major issues in the field of labor studies. Topics may include: the history and nature of work in modern societies, labor-management relations, the role of the different levels of government, technology and public- and private-sector unionism.

*Lectures, seminar, 3 hours per week.*

**LABR 2F95**

**Canadian economic policy**  
(also offered as ECON 2F95)

Canadian economic and business problems and policies. Specific topics will vary from year- to-year and may include

stabilization policies, competitive policies, tax policies, foreign trade and exchange policies.

*Lectures, 3 hours per week.*

Prerequisites: ECON 1P91, 1P92.

**LABR 2P09**

**Canadian economic history**

(also offered as ECON 2P09)

The economic development of Canada.

*Lectures, 3 hours per week.*

Prerequisites: ECON 1P91, 1P92.

**LABR 2P15**

**The economics of unions**

(also offered as ECON 2P15)

The study of labor unions in the marketplace. Typical topics are: the labor legislation covering unions; the effects of unions on wages, fringes, turnover, inequality and the productivity and profitability of firms; union behavior; the certification process; strikes; interest arbitration; and public-sector unionism.

*Lectures, 3 hours per week.*

Prerequisites: ECON 1P91, 1P92.

**LABR 2P32**

**The sociology of work**

(also offered as SOCI 2P32)

Understanding changes in the organization of work and the composition of the work-force with particular emphasis on the Niagara Peninsula. Topics include: unionization, management strategies, pay equity and employment equity, the international division of labor and other current issues in the Canadian labor movement. Those with work experience are encouraged to enrol.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 311hc.

**LABR 2P34**

**Sociology of trade unions**

(also offered as SOCI 2P34)

Labor process theories which focus on the relationship between technology, the division of labor, social relations of production and the manner in which the state, business and trade unions have responded to changes in the labor process. Seminars will deal with practical problems of contemporary labor relations.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 3P32 or 351 hc.

**LABR 3F00**

**Labor studies workshop**

A social science and internationally comparative perspective on the labor movement. Faculty from the departments of Economics, Politics and Sociology will participate in this course.

Restriction: Open only to LABR (combined) majors with a minimum of 8.0 overall credits.

Prerequisite: LABR 1F90 and one other LABR credit.

**LABR 3F51**

**Canadian public administration**

(also offered as POLI 3F51)

Theory and practice of public administration in Canada. Topics will include: organization of departments, regulatory agencies and crown corporations; financial and personnel administration; responsibility and accountability.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 2F12 or permission of the instructor.

Credit will not be granted to students who have prior credit in MGMT 3F51, MGMT(POLI) 3P50.

**LABR 3P24**

**Labor economics**

(also offered as ECON 3P24)

The economics of the labor market. Topics include the demand for labor, the supply of labor; investment in human capital. Policy applications are stressed.

Prerequisite: ECON 2P21 or 2P23.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in ECON 205.

**LABR 3P25**

**Topics in labor economics**

(also offered as ECON 3P25)

Topics vary from year-to-year, but examples are as follows: the economics of trade unions; discrimination in the labor market; unemployment; labor migration; unemployment and inflation.

*Lectures, 3 hours per week.*

Prerequisite: ECON 2P21 or 2P23.

(ECON 3P24 is recommended)

Credit will not be granted to students who have prior credit in ECON 205.

## Labor Studies

### LABR 3P30

#### **Sociology of women and work**

(also offered as SOCI 3P30 and WISE 3P30)

Both quantitative and qualitative research will explore the societal significance and implications of the change in women's participation in paid employment and domestic labor in this century. Attention will focus on specific areas: the ghettoization of the female labor force, women in professional and non-traditional occupations, microtechnology, part-time work and unionization.

*Lectures, seminar, 3 hours per week.*

### LABR 3P31

#### **Complex organizations**

(also offered as SOCI 3P31)

A critical overview of theories and research on the nature of complex organizations (e.g., the French Regulation School). Particular emphasis on the formal and informal aspects of the organizational roles, how morale, motivation, work discipline and conflict are regulated and to the feminist critiques of the traditional literature.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 345hc.

### LABR 3P33

#### **The state and economic life**

(also offered as POLI 3P33)

Political economy and the role of the state. Relationships between politics and markets and between democracy, capitalism and socialism. Topics discussed will include: regulation, public ownership, taxation, fiscal and monetary policy, income support programs, regional development and the screening of foreign direct investment.

*Lectures, seminar, 3 hours per week.*

### LABR 3P34

#### **Information technology and work**

(also offered as SOCI 3P34)

Information technology to the labor process. Topics to be discussed include the relationship of this technology to the number and types of jobs available, to the total number of required hours worked over a lifetime and to the increased importance given to education and work.

*Lectures, seminar, 3 hours per week.*

### LABR 3P65

#### **Introduction to public policy**

(also offered as POLI 3P65)

Major theories, approaches and concepts in the study of public policy. Topics may include: the nature of public policy studies, contending theories of the state and public policy making, the growth of the state and the expansion of the scope of public policy activities and alternative modes of state intervention.

*Lectures, seminar, 3 hours per week.*

### LABR 3P66

#### **Social movements**

(also offered as SOCI 3P66)

Either a general survey of the impact of ideology on behavior and the subsequent development of social movements or specific examinations of particular movements such as separatism, nationalism, fascism, Marxism or feminism.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 317hc.

### LABR 3P75

#### **Canadian labor history**

(also offered as HIST 3P75)

A survey of the history of Canadian workers and the labor movement, from the mid-nineteenth century to the present, combining studies of trade unions with the broader context of the social, community and political life of workers. Particular attention will be paid to how gender and race/ethnicity have shaped the experience of the working class in Canada.

*Lectures, seminar, 3 hours per week.*

## Liberal Studies

### Director

Gordon H. Coggins

### Associated faculty

Alan Arthur, History

Howard E. Bell, Mathematics

John G. Benjafield, Psychology

Gordon H. Coggins, English Language  
and Literature

Martin S. Gibson, Chemistry

Michael S. Hornyansky, English  
Language and Literature

Monica H. Hornyansky, Liberal Studies/  
Philosophy

Anne Leavitt, Liberal Studies

Anne Lordahl, Mathematics

William Mathie, Politics

Mary Frances Richardson, Chemistry

A. Victoria Soady, Liberal Studies/  
Classics

Donald J. Ursino, Biological Sciences

Carl M. Wolff, History

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### General information

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Liberal Studies provides an opportunity for the exploration and discussion of those questions which arise when education is directed towards the freedom of the fully examined life.

Questions of human nature and purpose and of our relationship to the natural order, for example, are examined primarily through reading and discussion of the great works of human reason and imagination that constitute our cultural tradition.

The program seeks to develop the skills and habits of inquiry, analysis, argument and expression needed for a rigorous treatment of these questions.

The program is made up of a set of closely related core courses. Because the core courses are intended to provide an integrated liberal education, to be cumu-

lative and to furnish the basis for an intellectual community of students and faculty, students in the program are normally required to complete most of these courses to qualify for a degree in liberal studies. The Liberal Studies program can, and in most cases should, be combined with a major in another discipline. Students combining Liberal Studies with a major concentration in Mathematics or Science will usually be exempted from the Mathematics or Computer Science and science context credits and may petition for exemption from the second language requirement. Students who complete the program are deemed to have completed all context requirements.

The focus of the Liberal Studies program is the Great Books Seminar which meets, under the guidance of two faculty leaders, twice weekly, throughout the entire program. Leaders for this seminar are drawn from a variety of disciplines and faculties of the University.

The other courses in the Liberal Studies program are intended both to provide for a kind of learning not possible in the seminar itself and also to enhance the quality and rigor of the inquiry and discussion which the seminar is intended to engender.

Students in the senior year are required to prepare a major essay on some aspect of the Liberal Studies under the guidance of a faculty member. Students who have combined Liberal Studies with a particular discipline are encouraged to prepare an essay integrating these two aspects of their work at Brock.

A non-credit series of lectures supplements the Liberal Studies program. The lectures will illuminate the works and issues addressed in the program from a variety of perspectives. Students also attend concerts, art exhibitions and dramatic productions. Students are expected to attend the lectures and cultural events, since these constitute an integral part of the Liberal Studies program. Each student in the program is assigned a faculty adviser for regular and incidental consultation.

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### Great Books Seminars

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The Great Books Seminars (LBST 1F90, 2F90, 3F90, 4F50) can be taken by other students where enrolments permit. Admission into the upper-year courses is dependent upon the completion of the credits in sequence or special permission of the instructor. The humanities context requirement may be met by successful completion of LBST 1F90. The social science context requirement may be met by successful completion of the full four-course sequence.

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### Bachelor of Arts in Liberal Studies

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#### Single major

##### Honors program

LBST 1F90, 1F92, 2F90, 2F95, 3F90, 4F50, 4P99; one credit from LBST 2P93, 2P96, 3P92, 3V95-3V99; SCIE 1F30 or another science context credit; a coherent sequence of three credits in another discipline related to a particular dimension of the student's Liberal Studies program. At least one such credit must be at the year 3 or year 4 level.

##### Combined major programs

##### Honors program

LBST 1F90, 1F92, 2F90, 2F95, 3F90, 4F50 and 4P99; one credit from LBST 2P93, 2P96, 3P92, 3V95-3V99; SCIE 1F30 or another science context credit; seven credits from the co-major discipline.

##### Pass program

LBST 1F90, 1F92, 2F90; LBST 3F90 or 4F50; LBST 2F95 or one credit from 2P96, 3P92, 3V95-3V99; SCIE 1F30 or another science context credit; five credits from the co-major discipline.

## Liberal Studies

### Language requirement for humanities majors

Liberal Studies BA majors are required to complete one 1F90 level course in a language other than English or both of GREE 1F00 and LATI 1F00.

### Bachelor of Science in Liberal Studies

Liberal Studies can be combined with a concentration in Mathematics or Science. Students interested in this combination should consult the director concerning their program and course selection.

For a Bachelor of Science degree a majority of the credits must be chosen from courses in Mathematics and Sciences.

Context requirements for Liberal Studies majors are deemed satisfied by successful completion of the program.

### Prerequisite and restrictions

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

### Description of courses

Please note that not all courses are offered in every session. Refer to applicable term timetable for details.

#### LBST 1F90

##### Great books seminar, I

Important works of Western literature, philosophy, science and theology from the Greco-Roman world to be read and discussed include Homer, Sophocles, Thucydides, Plato, Aristotle, Lucretius and The Old Testament.

*Seminars, 4 hours per week.*

Restriction: Open only to students admitted to LBST until date specified in BIRT guide.

#### LBST 1F92

##### Logic, rhetoric and practical criticism (also offered as ENGL 1F92)

Methods of developing, organizing and expressing ideas, directed to improving skills of thought, reading and persuasion. Classical logic and rhetoric will be examined in the works of Aristotle and Cicero. Students will analyse the logic and rhetoric of writings on a range of subjects in a variety of modes.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to students admitted to LBST until date specified in BIRT guide.

Credit will not be granted to students who have prior credit in ENGL 199 or LBST 195hc.

#### LBST 2F90

##### Great books seminar, II

Important works of Western literature, philosophy, science and theology from Vergil to Bacon, including Aquinas, Dante, Machiavelli, Luther, Calvin, Rabelais and relevant material from Aristotle and The New Testament.

*Seminars, 4 hours per week.*

Restriction: Open only to LBST (single or combined) majors until date specified in BIRT guide.

Prerequisite: LBST 1F90 or permission of the director.

#### LBST 2F95

##### Poetics: words and music

A comparative study of literary and musical forms and techniques, exploring the similarities and differences between verbal and musical expression and communication. No previous study of music is required.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to LBST (single or combined) majors.

Prerequisite: LBST 1F92 or permission of the director.

Credit will not be granted to students who have prior credit in LBST 3P95.

#### LBST 2P50

##### The Bible as literature

(also offered as ENGL 2P50)

A survey of the Old and New Testaments, 1611 version, from the perspective of literary criticism -- careful reading, interpretation and analysis.

*Lectures, seminar, 3 hours per week.*

#### LBST 2P93

##### Statistics for critics

Critical skills for evaluating statistics-based arguments from a variety of fields. Includes statistical concepts such as randomization, description, estimation and interference. A computer package is used.

*Lectures, seminar, lab, 4 hours per week.*

Credit will not be granted to students with prior credit in MATH 1F92 or MATH 1P98.

#### LBST 2P96

##### Euclidean and non-Euclidean geometry

Geometry from Euclid to the 19th century. Results and techniques from Euclidean and Lobachevskian geometry, with discussion of relevant logical and philosophical issues.

*Seminars, 3 hours per week.*

Co-requisite: enrolment in the Liberal Studies program.

Credit will not be granted to students who have prior credit in LBST 196hc.

#### LBST 3F90

##### Great books seminar, III

Important works of modern Western literature, philosophy, science and theology. Authors to be read and discussed include: Descartes, Racine, Molière, Milton, Hobbes, Locke, Spinoza, Hume, Kant and Burke.

*Seminars, 4 hours per week.*

Restriction: Open only to LBST (single or combined) majors until date specified in BIRT guide.

Prerequisite: LBST 2F90 or permission of the director.

#### LBST 3P92

##### Language and thought

An examination of the connections between spoken and written languages and the nature and structures of things thought and transmitted. Theories of language and some of the basic issues of contemporary linguistic analysis.

*Lectures, seminar, 3 hours per week.*

Prerequisite: LBST 1F90 or permission of the director.

Co-requisite: enrolment in the Liberal Studies program.

Credit will not be granted to students who have prior credit in LBST 2P92.

LBST 3V95-3V99

**Senior science seminar**

Exploration of a topic or theoretical concept in the physical or life sciences.

Co-requisite: enrolment in the Liberal Studies program or permission of director.

LBST 4F50

**Great books seminar, IV**

Important works of modern Western literature, philosophy, science and theology to be read and discussed include: Hegel, Marx, de Tocqueville, Dickens, Flaubert, Tolstoy, Dostoevsky, Nietzsche, Freud and Weber.

*Seminars, 4 hours per week.*

Prerequisite: LBST 2F90 or permission of the director.

LBST 4P99

**Essay workshop**

Workshop for development of the required senior liberal studies essays and discussion of issues the essays will explore.

*Seminars, tutorials, two terms.*



# Management, Marketing and Human Resources

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## Officers of instruction

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### Chair

J. David Whitehead

## Management

### Co-ordinator

Howard W. Prout

### Professors

W.D. Kenneth Kernaghan  
Kenneth E. Loucks

### Associate professors

Barbara J. Austin  
Eugene Kaciak  
Thomas M. Mulligan  
Howard W. Prout

### Assistant professor

J. Bradley Davis

## Marketing

### Co-ordinator

Peter Yannopoulos

### Professor

A. Tansu Barker

### Associate professors

H. Brian W. Metcalfe  
Ronald H. Rotenberg  
Peter Yannopoulos

### Assistant professors

Carmen W. Cullen  
Sanjay Putrevu

### Lecturer

Sharon M. Broderick

## Organizational behavior and human resources

### Co-ordinator

J. David Whitehead

### Professors

William W. Liddell  
Terence H. White

### Associate professors

Eli Levanoni  
Carol A. Sales  
Mark J. Thomas  
J. David Whitehead

### Assistant professor

Sharon E. Mason

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## General information

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### Taro Hall 313

The Faculty of Business offers honors programs in Business Administration and Accounting.

The program in Accounting is designed for students pursuing careers in the accounting profession. The program is professionally oriented and combines a high degree of specialization in accounting with studies in business, the social sciences, humanities, mathematics and sciences.

The program in Business Administration is designed for students pursuing careers in business and government. The program is professionally oriented and includes studies in the social sciences, humanities, mathematics and science.

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## Honors programs

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### Bachelor of Accounting (BAcc)

See the calendar entry for the Department of Accounting and Finance for program information.

### Bachelor of Business Administration (BBA)

The minimum grade requirement for admission to the Business Administration program is a 70 percent average on six OACs (or equivalent) including at least

one English and two OACs in mathematics with an average of 65 percent. The curriculum in Business Administration is offered only as an honors (four-year) program. On successful completion of the program, the degree of Bachelor of Business Administration (BBA) is awarded.

The requirement for graduation is a minimum grade average of 70 percent in all ACTG, ENTR, FNCE, MGMT, MKTG, OBHR credits and all other required major credits and a minimum grade average of 60 percent in the remaining credits. In accordance with academic regulations, each student will be allowed a maximum of 23 credit attempts to achieve the 20 credit honors degree.

All BBA students are required to take a number of core courses. All students should take the courses in the order prescribed below. In year 3, students select one of the optional areas. No student may take more than two of ACTG 4V90-4V99, FNCE 4V90-4V99, MGMT 4V90-4V99, MKTG 4V90-4V95, OBHR 4V90-4V99. Please consult the chair of the appropriate department for details.

### Periodic review of eligibility to continue

The eligibility of each student to continue in the Faculty of Business honors programs will be reviewed when the student has attempted three or more credits since the previous review.

Eligibility to continue is based on the student's major credit average and non-major credit average.

i.) A student with a major average of at least 70 percent and a non-major average of at least 60 percent, will be permitted to continue.

ii.) A student with a major average lower than 66 percent will not be permitted to continue.

iii.) Any student with averages that do not fit into categories (i) or (ii) above, will be permitted to continue, but will be informed by letter that both a major aver-

age of at least 70 percent and a non-major average of at least 60 percent, must be achieved on or before the date of the next review.

### Bachelor of Business Administration

#### Program requirements

##### Year 1

ECON 1P91, 1P92; MGMT 1P91, 1P92; MATH 1P60, 1P97; POLI 1F90; one science or humanities context credit.

##### Note:

Students having two or more OAC mathematics credits with an average mark of at least 75 percent may be exempted from MATH 1P60. Students should consult the Department of Mathematics. ECON 2P90, MATH 2P60 or any other ACTG, ENTR, FNCE, MGMT, MKTG, OBHR half credit course in proper sequence must be substituted for MATH 1P60.

##### Year 2

ACTG 2P11, 2P12; ECON 2P23; MGMT 1P95, 2P40; one-half credit from ENTR 2P91, FNCE 2P95, MGMT 2P82; MATH 1P98; MATH 2P60 or ECON 2P90; one science or humanities context credit (whichever was not taken in year 1).

##### Note:

In the Business Administration program, MGMT 1P91, 1P92 are prerequisites for all BBA courses except MGMT 1P95, 2P40 and 2P82. MGMT 1P95 is a required course for BBA and BAcc programs. ACTG 2P11 is a prerequisite for ACTG 2P12 and other courses in Business Administration numbered 2(alpha)90 or above. Students planning to take upper-level ECON courses should consult the Department of Economics before selecting elective courses.

In year 3 of their studies, students in Business Administration may concentrate their courses in various disciplines or functional areas of business. These are listed below as 'options'.

#### Accounting

See the Department of Accounting and Finance

#### Finance

See the Department of Accounting and Finance

#### General Management

##### Year 3

FNCE 3P92, 3P93; MGMT 3P30; MKTG 3P22, 3P24; OBHR 3P41, 3P42; POLI 3P50; one elective credit numbered 2(alpha)00 or above.

##### Year 4

MGMT 4P85, 4P86; three credits in ACTG, ENTR, FNCE, MGMT, MKTG, OBHR; one elective credit numbered 2(alpha)00 or above.

#### Human Resource Management

##### Year 3

FNCE 3P92, 3P93; MGMT 3P30; MKTG 3P22, 3P24; OBHR 3P41, 3P42; POLI 3P50; one elective credit numbered 2(alpha)00 or above.

##### Year 4

MGMT 4P85, 4P86; OBHR 4P62, 4P63; two credits from OBHR 4P61, 4P65, 4P66, 4P67, 4P68, 4P69; one elective credit numbered 2(alpha)00 or above.

##### Note:

The following courses are recognized by the Human Resources Professionals Association of Ontario (HRPAO) as credit towards the Certificate in Human Resource Management (CHRM) designation: OBHR 3P41, 3P42, 4P62, 4P63, 4P66, 4P67, 4P69.

#### Public Administration

##### Year 3

FNCE 3P92, 3P93; OBHR 3P41, 3P42; either POLI 3F51 or both POLI 3P50 and 3P65; MKTG 3P22, 3P24; one elective credit numbered 2(alpha)00 or above.

##### Year 4

MGMT 3P30; POLI 4P52, 4P54; one and one-half credits from POLI 3P52, 4P01, 4P11, 4P14, 4P15, 4P50, 4P51, 4P53, 4V10-4V19, 4V60-4V69; one and one-half credits in ACTG, ENTR, FNCE, MGMT, MKTG, OBHR; one-half elective credit numbered 2(alpha)00 or above.

#### Quantitative Analysis

Students interested in the quantitative analysis option should take MATH 2P60 rather than ECON 2P90.

##### Year 3

FNCE 3P92, 3P93; MGMT 3P30; MATH 3P58 and 4P58 or 3P59 and 4P59; MKTG 3P22, 3P24; OBHR 3P41, 3P42; POLI 3P50.

##### Year 4

MATH 3P58 and 4P58 or 3P59 and 4P59; MGMT 4P85, 4P86; one and one-half credits in ACTG, ENTR, FNCE, MGMT, MKTG, OBHR; one-half credit elective chosen in consultation with the dean of the Faculty; one elective credit numbered 2(alpha)00 or above.

#### Marketing

##### Year 3

FNCE 3P92, 3P93; MGMT 3P30; MKTG 3P22, 3P24; OBHR 3P41, 3P42; POLI 3P50; one elective credit numbered 2(alpha)00 or above.

##### Year 4

MGMT 4P85, 4P86; MKTG 4P22; two credits from MKTG 4P23, 4P25, 4P26, 4P27, 4P28, 4P29, 4P31, 4P33, 4P34; one-half credit in ACTG, ENTR, FNCE, MGMT, MKTG, OBHR; one elective credit numbered 2(alpha)00 or above.

#### Computer Science

Students interested in the Computer Science option should note that year 2 of that option differs from all other programs.

##### Year 2

ACTG 2P11, 2P12; COSC 1P01, 1P04; ECON 2P23; MATH 1P66, 1P67, 1P98; one science or humanities context credit (whichever was not taken in year 1).

##### Year 3

COSC 2P03; one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; FNCE 3P92, 3P93; MGMT 2P40; MKTG 3P22, 3P24; MATH 2P60; OBHR 3P41, 3P42.

## Management/Marketing/Human Resources

### Year 4

COSC 3F00, 3P32; MGMT 3P30, 3P31, 4P12, 4P85, 4P86; MATH 3P58 and 4P58 or 3P59 and 4P59.

### Bachelor of Business Administration for students holding other degrees

Students holding a university degree where the major area of concentration is other than business and with an overall average of at least 70 percent may be admitted and receive ten unspecified credits towards the BBA degree at Brock. These students will be required to complete the following program.

ECON 1P91, 1P92; MGMT 1P95, 3P30, 4P85, 4P86; OBHR 3P41, 3P42; MATH 1P98; ACTG 2P11, 2P12; FNCE 3P92, 3P93; MKTG 3P22, 3P24; two and one-half credits in ACTG, ENTR, FNCE, MGMT, MKTG, OBHR numbered 2(*alpha*)00 or above.

Students who are granted credit in any of the above courses must complete a program consisting of at least ten credits that includes the core courses above and substitute courses approved by the Faculty.

Students normally will enter the program in September. Applications for admission must be received at least two months before the program begins.

For graduation a minimum overall grade average of 70 percent is required in the approved program courses.

### Combined honors programs

Combined honors programs leading to an honors Bachelor of Arts degree are available in Business Administration and Economics and Business Administration and Politics. These programs are described below.

### Business Administration and Economics

#### Year 1

ECON 1P91, 1P92; MGMT 1P91, 1P92;

MATH 1P60, 1P97; POLI 1F90; one science or humanities context credit.

#### Year 2

ACTG 2P11, 2P12; ECON 2P21 or 2P23 (with permission of the department); ECON 2P22, 2P90; MGMT 1P95; MATH 1P98; POLI 3P50; one science or humanities context credit (whichever was not taken in year 1).

#### Year 3

ECON 2P31, 2P32; one ECON credit; FNCE 3P92, 3P93; MKTG 3P22, 3P24; OBHR 3P41, 3P42.

#### Year 4

ECON 3P90, 3P91, 4P13, 4P14; MGMT 2P40, 3P30; one credit in ACTG, ENTR, FNCE, MGMT, MKTG, OBHR; one elective credit.

### Business Administration and Politics

Together with Politics, the Faculty offers a special program leading to an honors BA in Business and Politics. The general requirements for this program are the same as for other combined honors programs, but course selection is concentrated in the areas of public administration and law. This program is designed for anyone with an interest in public administration, administrative careers in governments, courts and related organizations.

#### Year 1

MGMT 1P91, 1P92; ECON 1P91, 1P92; POLI 1F90; one science and one humanities context credit (FREN 1F90 recommended for those with necessary prerequisites).

#### Year 2

ACTG 2P11, 2P12; MGMT 1P95, 2P40; POLI 2F12, 2P80; MATH 1P98; one credit in POLI, usually POLI 2F90 (2P01 and one of 3P04, 3P06, 3V00-3V09, 4P01, 4P02, 4P04, and 4V00-4V09 may be taken in place of 2F90).

#### Year 3

MKTG 3P22; OBHR 3P41, 3P42; POLI 3F51, 3P12; one credit from POLI 3P11, 3P15, 3P16, 3P18, 3P26, 3P27, 3P33, 3P52, 3P65 and 3P66; one elective credit (ECON 3P14, 3P15 recommended).

### Year 4

FNCE 3P92, 3P93; MGMT 3P30; one-half credit from OBHR 4P61, 4P62, 4P63, 4P66, 4P67, 4P68, 4P69, 4P72; POLI 3P91 or 3P92; POLI 4P54; one and one-half credit from POLI 4P01, 4P11, 4P14, 4P15, 4P50, 4P52, 4P53, 4P65 and 4V10-4V19; one-half elective credit.

### Bachelor of Business Economics

See separate calendar entry under Business Economics.

### Non-BBA, BAcc, combined honors majors

Students in other disciplines who wish to enrol in credit courses in Business should select from the following approved courses: ACTG 2P11, 2P12, all ENTR courses, FNCE 2P92, 2P93, 2P95, MKTG 2P96, 2P97, MGMT 1P91, 1P92, 2P30, 2P40, 2P82, 3P81, 3P98; OBHR 3P41, 3P42.

### Prerequisites and restrictions

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

### Description of courses

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

#### ENTR 2P91

#### Entrepreneurship

Entrepreneurs and the new venture creation process. An examination of the role and attributes of entrepreneurs and the processes involved in successfully launching new enterprises.

*Lectures, seminar, 3 hours per week.*  
Credit will not be granted to students who have prior credit in MGMT 4P92 or 4V92.

**ENTR 2P92**

**Entrepreneurial opportunities**

Opportunity identification and assessment; appropriate skills, attributes and resources of the entrepreneur. Topics may include: the sources of ideas, shaping ideas into commercially viable opportunities, protecting ideas and strategies for commercial exploitation of ideas, environmental scanning, trend identification, futurism and creativity.

*Lectures, seminar, 3 hours per week.*

Prerequisite: ENTR 2P91 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in MGMT 4P93 or 4V93.

**ENTR 3P91**

**New venture creation**

Strategies and techniques for gaining use of key physical, human and financial resources for a new venture. A review of public and private sources of debt and equity financing, means of building the entrepreneurial team and various means of marshalling resources for use in the enterprise.

*Lectures, seminar, 3 hours per week.*

Prerequisite: ENTR 2P92 or registration in year 3 or above in a Business program or consult the instructor for permission to register.

**ENTR 3P92**

**New venture planning**

Aspects of strategic and operational planning relevant to the successful creation of an entrepreneurial firm. Particular attention will be given to entry and early-stage growth strategies based on sustainable, competitive advantages. Preparation of a written formal plan such as might be presented to a source of venture capital.

*Lectures, seminar, 3 hours per week.*

Prerequisite: ENTR 2P92 or 3P91 or registration in year 3 or above in a Business program or consult the instructor for permission to register.

**ENTR 3P93**

**New venture management**

Development of management concepts and techniques relevant to new and growing enterprises. Adaptations of management techniques due to limitations of management time and resources in early stage companies as well as changes to management approaches as companies grow.

*Lectures, seminar, 3 hours per week.*

Prerequisite: ENTR 3P92 or consult the instructor for permission to register.

**ENTR 3P94**

**Intrapreneurship**

Management of innovation and entrepreneurship in mid-sized and larger organizations. The role of leadership in developing and maintaining innovation and entrepreneurship and the mechanisms for stimulating organizational growth and entrepreneurship culture. Detailed attention is given to ways in which organizations either stifle or encourage innovation via their culture, incentives and structures.

*Lectures, seminar, 3 hours per week.*

Prerequisite: ENTR 2P92 or 3P92 and registration in year 3 or higher or consult the instructor regarding permission to register.

**MGMT 1P91**

**Introduction to business**

A survey of the five basic business functions: marketing, production, accounting and finance, personnel, information processing. Basic concepts of organizing, forms of business enterprises and the need for common goals and objectives in organizations.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in ADMI 190 or 191hc.

**MGMT 1P92**

**Introduction to management**

The role of the manager within the organization, with particular emphasis on the basic functions of planning organizing, staffing, directing and controlling.

*Lectures, seminar, 3 hours per week.*

Prerequisite: MGMT 1P91 or permission of instructor.

Credit will not be granted to students who have prior credit in ADMI 190 or 192hc.

**MGMT 1P95**

**Introduction to management software**

A practical introduction to the kinds of software systems of use to managers, with principal attention to systems for personal computers. Major topics include: word processing systems, spreadsheets, data base management systems, integrated packages, expert systems and the effect of business computing in the workplace and in society. No previous exposure to computing will be assumed.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to BAcc, BBA and combined Business majors.

**MGMT 2P30**

**General operations management**

An overview of operations management and its interactions with other functional areas. Topics include: process analysis, forecasting, scheduling, materials management, quality assurance and capacity planning.

*Seminars, 3 hours per week.*

Restriction: Not open to BAcc, BBA or combined Business majors.

Prerequisites: ACTG 2P11, MGMT 1P92 and COSC 1P90.

Credit will not be granted to students who have prior credit or concurrent registration in MGMT 3P30, 3P39.

**MGMT 2P40**

**Commercial law**

An introduction to the basic legal considerations for the business organization.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in ACTG 1P71 or ADMI 240hc.

**MGMT 2P82**

**Business ethics**

(also offered as PHIL 2P82)

Business practices, institutions and actions in order to evaluate their contribution to the general human good. Topics to be considered may include false or misleading advertising, product safety, monopolistic price schemes, effects of pollution, discriminatory hiring policies, the role of shareholders, management, government and the public in determining corporate policy and economic justice.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in ADMI 282hc.

MGMT 3P30

**Operations management I**

An introduction to some topics related to the short-term management of the operations function in the manufacturing and service sectors for both profit and not for profit organizations. The managerial implications of several types of operating processes will be discussed as well as topics relating to the role and control of inventories and work force management. *Lectures, seminar, case discussion, 3 hours per week.*

Prerequisites: ACTG 1P12 or 2P12, MATH 1P98, MGMT 1P95 and either MATH 2P60 or ECON 2P90.

Credit will not be granted to students who have prior credit or concurrent registration in MGMT 2P30, 3P39.

MGMT 3P31

**Operations management II**

An extension of operations management I into some longer-term aspects of managing the operations function in the manufacturing and service sectors for both profit and not-for-profit organizations. Topics will include aggregate planning and scheduling, quality control, facilities planning, technology planning and operations strategy. *Lectures, seminar, 3 hours per week.*

Prerequisite: MGMT 3P30.

Credit will not be granted to students who have prior credit in ADMI 331hc.

MGMT 3P39

**Fundamentals of operations management**

Some fundamental concepts relating to management of the operations function in manufacturing and service sectors in for-profit and not-for-profit organizations. Topics will include process analysis, materials management, scheduling and operations strategy. *Seminars, discussion, 3 hours per week.*

Restriction: Open only to BAcc majors.

Prerequisites: ACTG 2P21, FNCE 3P93, MATH 2P60, MGMT 1P95.

Co-requisite: MKTG 3P29, OBHR 3P41.

Credit will not be granted to students who have prior credit or concurrent registration in MGMT 2P30, 3P30.

MGMT 3P81

**Strategic management**

An integration of the disciplines in the business economics program based on the viewpoint of the firm's chief executive officer. The identification, development and implementation of corporate strategy. *Seminars, cases, 3 hours per week.*

Restriction: Not open to BAcc, BBA or combined Business majors. Open only to BBE majors until date specified in BIRT guide.

Prerequisites: ACTG 1P11, 1P12 or 2P11, 2P12; ECON 1P91, 1P92; FNCE 2P92 or 3P92 and 2P93 or 3P93; MGMT 1P91; MKTG 2P96 or 3P22; OBHR 3P41.

Credit will not be granted to students who have prior credit in ADMI 381hc or MGMT 481 or 4P85, 4P86.

MGMT 3P98

**International business**

Consideration of the global business environment; to evaluate, develop and implement international business strategies; to appreciate the international opportunities and constraints facing Canadian businesses. *Lectures, seminars, cases, 3 hours per week.*

Prerequisites: ACTG 2P12 and MGMT 1P92 or permission of the instructor.

Credit will not be granted to students with prior credit in MGMT 3V98 or 4V98.

MGMT 3V32

**Purchasing management**

The purpose of the purchasing function and its relationship with other areas of the organization. Problems involved in the determination of appropriate quality, materials management, source selection, assurance of supply, pricing policies and tendering procedures as they affect the efficiency of the business or public institution. *Seminar, 3 hours per week.*

Prerequisite: MGMT 2P30 or 3P30.

MGMT 3V90-3V99

**Topics in management I**

A course structured by a faculty member having specialized interest in an area within the discipline, normally offered on an experimental basis.

MGMT 4F90

**Research topic**

Directed intensive study and research under the supervision of a faculty member in an area in which the student has shown particular competence. To be chosen in consultation with the supervising faculty member.

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: Consent of the chair and supervising faculty member.

MGMT 4P12

**Information systems**

Principles and practice of systems analysis and design; project selection; control of EDP operations; basics of MIS. *Lectures and case discussions, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisites: ACTG 1P11, 1P12 or 2P11, 2P12; MGMT 1P95; MKTG 3P22, OBHR 3P41 or permission of the instructor.

Credit will not be granted to students who have prior credit in ADMI 412hc.

MGMT 4P85

**Business policy I**

An introduction to industry analysis and competitive strategy formulation emphasizing integration of functional area strategies and positioning with regard to market opportunities. *Lectures, seminar, case discussions, 3 hours per week, plus major field work project.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: FNCE 3P93, MGMT 3P30, MKTG 3P24, OBHR 3P42 or permission of the instructor.

Credit will not be granted to students who have prior credit in MGMT 481 or MGMT 485hc.

**MGMT 4P86**

**Business policy II**

An extension of industry analysis and competitive strategy formulation to multiple business units and international firms and an examination of the means by which strategy is implemented.

*Lectures, seminar, case discussions, 3 hours per week, plus a continuation of the field work project from MGMT 4P85.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MGMT 4P85 (MGMT 4P85 and 4P86 are to be taken in consecutive terms).

Credit will not be granted to students who have prior credit in MGMT 481 or MGMT 486hc.

**MGMT 4P89**

**Business policy for accounting**

An introduction to the general management of a total organization and to strategic thinking and techniques. Topics include industry and competitive analysis and corporate level strategy. Throughout, the emphasis will shift from strategy formulation to implementation, but both will be treated as part of an ongoing process of strategic management.

*Lectures, seminar, case discussions, 3 hours per week.*

Restriction: Open only to BAcc majors. Prerequisite: ACTG 2P31, FNCE 3P93, MGMT 3P39, MKTG 3P29, OBHR 3P41 or MGMT 3P49.

Credit will not be granted to students who have prior credit in MGMT 4P81 or 4P85, 4P86.

**MGMT 4P91**

**Research topic**

Directed study or research under the supervision of a faculty member in an area in which the student has shown particular competence. To be chosen in consultation with the supervising faculty member.

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Credit will not be granted to students who have prior credit in ADMI 490hc, 491hc.

**MGMT 4V90-4V99**

**Topics in management II**

A course structured by a faculty member having specialized interest in an area within the discipline, normally offered on an experimental basis.

Restriction: Open only to BBA and combined Business majors until date specified in BIRT guide. Students must have a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

**1993-94: (4V90) Topics in public policy I**

Public policy planning, analysis and implementation. The central focus will be on policies relating to growth, price stability, high employment, international trade and exchange rates.

*Seminars, discussion, guest lecturers, 3 hours per week.*

Prerequisite: Open only to students with approval to year 4.

**1993-94: (4V91) Topics in public policy II**

Public policy planning, analysis and implementation. The central focus will be on industrial, regional, social and science and technology policies.

*Seminars, discussion, guest lecturers, 3 hours per week.*

Prerequisite: Open only to students with approval to year 4.

**1993-94: (4V92) Management of service operations**

Topics include establishing a framework for the evaluation of existing and new service concepts and examining similarities and differences between management in the service and manufacturing sectors. Creation of an awareness of problems, issues and opportunities in the service sector, important concepts in service management and service sector practices.

*Seminars, case studies, 3 hours per week.*

Prerequisite: Open only to students with approval to year 4.

**1993-94: (4V94) Public policy: advice and processes**

Public policy advice and implementation. The central focus will be on a variety of institutions with significant policy-oriented interests, activities and/

or mandates; as well as on key processes of policy making.

*Seminars, discussion, guest lecturers, 3 hours per week.*

Prerequisite: Open only to students with approval to year 4.

**MKTG 2P96**

**Marketing basics**

An introduction to basics of marketing for non-BBA students.

*Lectures, seminar, 3 hours per week.*

Restriction: Not open to BAcc, BBA and combined Business majors. Open only to BBE and COMM (Business Communications) majors until date specified in BIRT guide.

Prerequisite: MGMT 1P92.

Credit will not be granted to students with prior credit or concurrent registration in MKTG 3P22 or 3P29.

**MKTG 2P97**

**General marketing management**

Exploring the marketing management process for non-BBA students.

*Lectures, seminar, 3 hours per week.*

Restriction: Not open to BAcc, BBA and combined Business majors. Open only to BBE and COMM (Business Communications) majors only until date specified in BIRT guide.

Prerequisite: MKTG 2P96.

Credit will not be granted to students with prior credit or concurrent registration in MKTG 3P24 or 3P29.

**MKTG 3P22**

**Introduction to marketing**

The characteristics of the Canadian marketing function, basic marketing concepts and the marketing function in organizations.

*Lectures, case discussions, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors.

Prerequisites: ACTG 1P12 or 2P12, MGMT 1P91, 1P92 or permission of the instructor.

Credit will not be granted to students with prior credit or concurrent registration in MKTG 2P96 or 3P29.

**MKTG 3P24**

**Marketing management**

The use of marketing concepts in decision making and the role of the marketing manager.

*Lectures, seminar, case discussions, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors.

Prerequisite: MKTG 3P22.

Credit will not be granted to students who have prior credit or concurrent registration in MTKG 2P97 or 3P29.

#### MKTG 3P29

##### **Fundamentals of marketing management**

Fundamentals of marketing and the management of the marketing process in manufacturing, service and not-for-profit organizations. Topics will include consumer behavior, marketing research, marketing strategy and the interrelationships of the elements of the marketing mix.

*Lectures, seminar, case discussions, 3 hours per week.*

Restriction: Open only to BAcc majors. Prerequisites: ACTG 2P21, FNCE 3P93, MATH 2P60.

Co-requisite: MGMT 3P39, OBHR 3P41.

Credit will not be granted to students who have prior credit or concurrent registration in MKTG 2P96, 2P97, 3P22, 3P24.

#### MKTG 4F90

##### **Research topic**

Directed intensive study and research under the supervision of a faculty member in an area in which the student has shown particular competence. To be chosen in consultation with the supervising faculty member.

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: Consent of the chair and supervising faculty member.

Credit will not be granted to students who have prior credit in ADMI 490hc, 491hc.

#### MKTG 4P22

##### **Marketing research**

The nature and scope of market research as a managerial tool including an examination of scientific method, research and questionnaire design, experimentation, sample selection, data collection and research procedure. A field work assignment will be required.

*Lectures, seminar, case discussions, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MKTG 3P24.

Credit will not be granted to students who have prior credit in or concurrent enrollment in MGMT 4P79.

#### MKTG 4P23

##### **Marketing communications**

An examination of the major management problems which arise in the formulation, implementation and evaluation of programs in the areas of advertising, selling and related sales promotional activities.

*Lectures, seminar, case discussions, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MKTG 3P24.

Credit will not be granted to students who have prior credit in ADMI 423hc.

#### MKTG 4P25

##### **Marketing strategy**

An examination of the process by which a business develops and executes market strategies. Topics include analysis of industry, customer, market and competitive environments, sources of competitive advantage and methods of allocating resources to new and established products. The strategic role of market evolution and cost dynamics will also be examined.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MKTG 3P24.

Credit will not be granted to students who have prior credit in ADMI 425hc.

#### MKTG 4P26

##### **Sales management**

Management of the sales force and the role of the sales function in marketing strategy. Topics include the interface

between sales strategy and marketing strategy; duties of the sales manager with respect to sales force selection, training, compensation and evaluation; time and territory management; sales forecasting; the impact of new technology on the sales management function; career paths in sales management.

*Lectures, seminar, case discussions, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors until date specified in BIRT guide. Student must have a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MKTG 3P24.

Credit will not be granted to students who have prior credit in ADMI(MKTG) 426hc.

#### MKTG 4P27

##### **Marketing and society**

Current issues in marketing and the role marketing plays in a changing society. Topics include the state of the consumer movement, marketing ethics and deceptive practices, truth and deception in advertising, government regulation, consumer protection, information and product safety. New developments and their implications for future marketing strategy will be examined and discussed.

*Lectures, seminar, case discussions, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors until date specified in BIRT guide. Student must have a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MKTG 3P24.

Credit will not be granted to students who have prior credit in ADMI(MKTG) 427hc.

#### MKTG 4P28

##### **Retail management**

The managerial role and its effect on retailing decisions. The institutional structure of retailing and its past and probable future patterns. Identifying, appraising and formulating retail marketing strategies in order to understand the interrelationships among suppliers, customers and members of the distribution channels.

*Lectures, seminar, case discussions, 3*

*hours per week.*

Restriction: Open only to BBA and combined Business majors until date specified in BIRT guide. Student must have a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MKTG 3P24.

Credit will not be granted to students who have prior credit in ADMI(MTKG) 428hc.

#### MKTG 4P29

##### **Industrial marketing**

The function of the marketer in the intermediate customer market. A study of the demand, communications and delivery processes which are very different from those of the consumer market. Emphasis is given to market identification, the role of personal communications and to solving customer problems.

*Seminars, case discussions, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors until date specified in BIRT guide. Student must have a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MKTG 3P24.

Credit will not be granted to students who have prior credit in ADMI 429hc.

#### MKTG 4P31

##### **Consumer behavior**

An introduction to the application of behavioral science concepts to marketing. An examination of the interactions of consumers, sellers, public policy makers and researchers.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors until date specified in BIRT guide. Student must have a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MKTG 3P24.

Credit will not be granted to students who have prior credit in ADMI 431hc.

#### MKTG 4P33

##### **International marketing**

The marketing concept and individual components of the marketing mix in the context of the international environment; the differences between international

and domestic marketing and how they affect the planning organization and control of marketing programs.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors until date specified in BIRT guide. Student must have a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MKTG 3P24.

#### MKTG 4P34

##### **Marketing financial services**

The application of marketing principles to financial services. Site visits will be made to Canadian and U.S. financial institutions.

*Seminar, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors until date specified in BIRT guide. Student must have a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Credit will not be granted to students with prior credit in MKTG 4V92.

#### MKTG 4P91

##### **Research topic**

Directed intensive study or research under the supervision of a faculty member in an area in which the student has shown particular competence. To be chosen in consultation with the supervising faculty member.

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: Consent of the chair and supervising faculty member.

Credit will not be granted to students who have prior credit in ADMI 490hc, 491hc.

#### MKTG 4V90-4V95

##### **Topics in marketing**

A course structured by a faculty member having specialized interest in an area within the discipline, the course is normally offered on an experimental basis. Restriction: Open only to BBA and combined Business majors until date specified in BIRT guide. Student must have a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

#### MKTG 4V93

##### **Total quality management**

An introduction to total quality management and its role in the marketing of goods and services. Topics include customer driven quality, planning and designing effective quality control systems, quality in products and process planning, quality circles, zero defects, continuous improvement, statistical methods, the role of total quality management in achieving customer satisfaction.

*Lectures, seminars, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors until date specified in BIRT guide. Students must have a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MKTG 3P24, MGMT 3P30.

#### OBHR 3P41

##### **Organizational behavior**

Micro aspects of formal organizations from a behavioral science perspective. Theories, research and current practices in the management of human resources will be discussed. Topics include motivation, leadership, group dynamics, interpersonal communication, conflict and stress management.

*Lectures, 3 hours per week.*

Restriction: Open only to BAcc, BBE, COMM (Business Communications), BBA and combined Business majors until date specified in BIRT guide.

Prerequisites: ACTG 1P12, 2P12, MGMT 1P91, 1P92 or permission of the instructor.

Credit will not be granted to students who have prior credit in MGMT 3P31, 3P49, ADMI 341hc, SOCI 344hc or 341hc.

#### OBHR 3P42

##### **Organization theory and design**

Macro aspects of formal organizations from a behavioral perspective. Theories, research and current practices in organizational design and redesign will be discussed. Topics include: the development of management thought organizational goals organizational effectiveness and efficiency, environment, technology, structural alternatives, power and politics in organizations and organizational culture.

*Lectures, 3 hours per week.*



Restriction: Open only to BAcc, BBE, COMM (Business Communications), BBA and combined majors until date specified in BIRT guide.

Prerequisite: OBHR(MGMT) 3P41.

Credit will not be granted to students who have prior credit in MGMT 3P42, ADMI 340hc or SOCI 343hc or 342hc.

#### OBHR 3V90-3V99

##### Topics in organizational behavior and human resources I

A course structured by a faculty member having specialized interest in an area within the discipline, normally offered on an experimental basis.

#### OBHR 4F90

##### Research topic

Directed intensive study and research under the supervision of a faculty member in an area in which the student has shown particular competence. Topic to be chosen in consultation with the supervising faculty member.

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: Consent of the chair and supervising faculty member.

#### OBHR 4P61

##### Organizational development: individual and interpersonal skills

Theory and practice of individual and interpersonal skills needed to effect development and change in organizations. Emphasis on small group experiential exercises for skill development.

*Lectures, experiential exercises, case discussions, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: OBHR(MGMT) 3P42.

Credit will not be granted to students who have prior credit in MGMT 4P61.

#### OBHR 4P62

##### Human resource management

Manpower recruitment, selection and training, wage and salary administration and the design and administration of benefit programs.

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

*Lectures, seminar, 3 hours per week.*

Prerequisite: OBHR(MGMT) 3P42.

Credit will not be granted to students who have prior credit in ADMI 462hc.

#### OBHR 4P63

##### Industrial and labor relations

An overview of labor-management relations in Canada emphasizing the collective bargaining process, the grievance and arbitration process and other aspects of collective agreement administration.

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: OBHR(MGMT) 3P42 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in MGMT 4P63.

#### OBHR 4P65

##### Negotiating in organizations

The diagnosis of the causes and consequences of conflict in organizations. Topics include the bases of organizational conflict, including competition over resources, information, power and goal setting. Structural, group and individual conflict resolution strategies will be stressed. In addition to managing conflict through organizational and job design, the course will consider the use of bargaining and negotiation skills to reduce conflict at various organizational levels.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: OBHR(MGMT) 3P42.

Credit will not be granted to students who have prior credit in MGMT 4P65.

#### OBHR 4P66

##### Motivation and compensation management

A review of motivation theories and their application. An examination of compen-

sation theory and practice including pay and benefits determination, job evaluation and the overall planning and administration of compensation and reward systems.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: OBHR(MGMT) 3P42.

Credit will not be granted to students who have prior credit in MGMT 4P66.

#### OBHR 4P67

##### Training and development

The three sequential steps in the training and development process in organizations; i.e., assessment of training needs, development and implementation of the training program and evaluation of the training program. A critical approach to training methods used in employee orientation, skill training and management development in the context of adult education.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: OBHR(MGMT) 3P42.

Credit will not be granted to students who have prior credit in MGMT 4P66.

#### OBHR 4P68

##### Leadership and supervision

Leadership and supervision in a variety of organizational settings. Some of the areas to be examined in this course are: the state of the art in leadership research, leadership effectiveness through the organizational hierarchy with a particular focus on middle management issues, the new supervisor and supervisory and other managerial roles.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: OBHR(MGMT) 3P42.

Credit will not be granted to students who have prior credit in MGMT 4P68.

OBHR 4P69

**Staffing and evaluation**

Current issues in personnel selection, placement and performance evaluation in organizations in the context of Human Rights/Equal Employment legislation. A review and evaluation of recruitment and selection strategies and the validation of selection, placement and performance evaluation practices.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: OBHR(MGMT) 3P42.

Credit will not be granted to students who have prior credit in MGMT 4P69.

OBHR 4P72

**Labor law**

A review of federal and provincial labor statutes, the practices of federal and provincial labor relations boards and ministries of labor and the common law of employer-employee relations: emphasis on the impact of these statutes, regulations, board and ministries on management, union and employees.

*Lectures, seminars, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Credit will not be granted to students who have prior credit in MGMT 4P72.

OBHR 4P79

**Human resource research and information systems**

The nature and scope of computerized human resource information systems (HRIS) as a managerial tool. Topics include the application of statistics and research methodology to human resource management, the interface of HRIS with other human resource management functions and various applications of such systems to the work of human resource professionals.

*Lectures, seminar and computer lab, 3 hours per week.*

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

Prerequisite: MGMT 1P95 (or equivalent); OBHR(MGMT) 3P42.

OBHR 4P91

**Research topic**

Directed study and research under the supervision of a faculty member in an area in which the student has shown particular competence. Topic to be chosen in consultation with the supervising faculty member.

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

OBHR 4V90-4V99

**Topics in organizational behavior and human resources II**

A course structured by a faculty member having a specialized interest in an area within the discipline, normally offered on an experimental basis.

Restriction: Open only to BBA and combined Business majors with a minimum of 13.5 overall credits and either a major average of 70 percent or approval to year 4.

# Mathematics

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## Officers of instruction

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### Chair

Shao-Chien Chang

### Professors

Howard E. Bell  
Shao-Chien Chang  
Velmer B. Headley  
Ronald A. Kerman  
Charles F. Laywine  
John P. Mayberry  
Eric R. Muller  
Jan Vrbik

### Associate professors

John W. Auer  
Hichem Ben-el-Mechaiekh  
Thomas A. Jenkyns  
William J. Ralph  
Kris J. Srivastava

### Assistant professors

Mei Ling Huang  
Anne E. Lordahl

### Instructor

Brian Calvert

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## General information

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### Schmon Tower 1112

The Department of Mathematics welcomes inquiries from any student who may be interested in pursuing his or her degree in either pure mathematics (mathematics for its own sake) or applied mathematics (mathematics used for attacking problems in other fields). The interests and experience of the faculty in both areas are varied and extensive. Because the department's entire teaching commitment is to undergraduate teaching, members of the faculty are available to an extraordinary degree for consultation with undergraduate students.

Certain courses are required for any degree in Mathematics (see below). Because a Mathematics major needs both

facility in dealing with mathematical theories and experience in the application of mathematics to real-world problems, each student should discuss his or her particular interests with faculty before selecting elective courses. At least one-third of a student's upper-year Mathematics courses should be chosen from each of the following groups:

(a) More theoretical courses: MATH 2F00, 2F10, 2F92, 2F94, 3F00, 3F10, 3F94, 3P97, 3P98, 4F02, 4F10, 4F16, 4F51, 4F52, 4P19, 4P20.

(b) Courses emphasizing applications: MATH 2F95, 2F96, 2P20, 2P60, 3P20, 3P57, 3P58, 3P59, 3P95, 3P96, 4F21, 4P58, 4P59.

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## Honors program

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An honors degree program in Mathematics requires twelve MATH credits, which must include MATH 1P12, 1P90; 1P93 and either 1P94 or 1P95; 2F00, 2F10, 3F00, 3F10 and at least three MATH credits numbered 3 (*alpha*)90 or above. A student intending graduate work in Mathematics will find it essential to have either MATH 4F02 or 4F10 and desirable to have both.

A typical program will be as follows:

### Year 1

MATH 1P12, 1P90; MATH 1P93 and either 1P94 or 1P95; three elective credits, at least two of which should be chosen to fulfil context requirements (PHYS 1F90 is recommended as the science context credit for students interested in physical applications of mathematics).

### Year 2

MATH 2F00, 2F10; one credit from MATH 2F92, 2F94, 2F96, 2P20, 3P20; two electives.

### Year 3

MATH 3F00, 3F10; one credit from those mentioned above or MATH 3F94, 3P57, 3P58, 3P59, 3P95, 3P96, 3P97,

3P98, 4F21, 4P19, 4P20, 4P58, 4P59; two electives.

### Year 4

Four credits in MATH; one elective.

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## Pass program

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A pass degree program in Mathematics requires eight MATH credits, which must include MATH 1P12, 1P90, 1P93 and either 1P94 or 1P95, 2F00 and either 2F10 or 3F10.

A typical program will be as follows:

### Year 1

MATH 1P12, 1P90; MATH 1P93 and either 1P94 or 1P95; 1P94 or 1P93, 1P95; three elective credits, at least two of which should be chosen to fulfil context requirements (PHYS 1F90 is recommended as the science context credit for students interested in physical applications of mathematics).

### Year 2

MATH 2F00; two credits from MATH 2F10, 2F92, 2F94, 2F96, 2P20, 2P60, 3F10, 3P20; one context credit (if all three are not taken in year 1); one elective credit.

### Year 3

Three MATH credits from those mentioned above or MATH 3F00, 3F94, 3P57, 3P58, 3P59, 3P95, 3P96, 3P97, 3P98, 4F21, 4P19, 4P20, 4P58, 4P59; two elective credits.

To qualify for a pass degree, students must complete a minimum of three credits numbered 2(*alpha*)90 or above.

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## Combined major programs

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Combined major programs have been developed by the Department of Mathematics in co-operation with each of these departments: Biological Sciences, Chemistry, Computer Science and Infor-

mation Processing, Economics and Physics. If any student wishes a major program which combines Mathematics with any other discipline, he or she may request approval of an individual program from the two departments involved; such a program must include at least five MATH credits for a pass degree and at least seven MATH credits for an honors degree.

A typical combined major is indicated below; others are included in the calendar entry of the co-operating department.

**Mathematics and Computer Science**

**Honors program**

*Year 1*

MATH 1P66, 1P67; MATH 1P93 and either 1P94 or 1P95; COSC 1P01, 1P04; one science and one social science context credit.

*Year 2*

MATH 1P12, 2F95, 2P60; COSC 2F00, 2P03, one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06, 2Y07; one humanities context credit.

*Year 3*

MATH 2F96, 2P20, 3F65; COSC 3F00, 3P02, 3P04; one-half credit elective.

*Year 4*

MATH 2F10 or 3F10; MATH 4P19, 4P20; two COSC credits at the 3(alpha) 90 level or above; one elective credit.

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**Concurrent BSc/BEd**

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The Faculty of Mathematics and Science and the Faculty of Education co-operate in offering a concurrent pass BSc/BEd program for students interested in teaching math or science at the Junior/Intermediate level; grades 4 - 10. Please refer to the Education-Concurrent BSc/BEd Program listing for additional information.

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**Prerequisite and restrictions**

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You must check course descriptions to ensure that you meet prerequisites. Students can be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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**Description of courses**

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

Note that courses marked in the following descriptions with an asterisk(\*) are "service courses", developed specifically to serve the needs of students majoring in some other area; those courses will not be counted among the Mathematics courses required for a Mathematics degree.

**\*MATH 1F92**

**Introductory statistics**

Designed for students of Geography, Physical Education, Psychology, Sociology and Urban and Environmental Studies. Types of scales; frequency distribution, mean, mode, median and measures of dispersion; elements of probability theory, probability distributions, non-parametric tests; Normal, t, F and  $\chi^2$  distributions; means and variance tests; analysis of variance, correlation and regression, applications and use of a computer package.

*Lectures, 3 hours per week; tutorial, 1 hour per week.*

Prerequisite: grade 11 mathematics credit.

Note: Not open to students with credit in any university mathematics or statistics course.

**MATH 1P12**

**Introductory linear algebra**

Vector algebra; systems of linear equations; basic matrix operations; matrix inversion; determinants, characteristic equations, eigenvalues and eigenvectors; diagonalization; the use of compu-

ter algebra systems.

*Lectures, 4 hours per week; tutorial, 1 hour per week.*

Prerequisite: two OAC mathematics credits (a third OAC mathematics credit is strongly recommended).

**\*MATH 1P60**

**Mathematics for administrative studies**

Elementary probability with finite sample spaces, counting theorems, notation and operations of set theory, applications of probability (independent events, binomial experiments, elements of decision theory, Bayes theorem); properties of the real number line, absolute values, solution sets of equalities and inequalities, elements of linear programming; arithmetic and geometric series, interest, annuities, bonds, mortgages, sinking funds; relations, functions and graphing; polynomial, logarithmic and exponential functions; introduction to linear algebra-systems of linear equations, vector and matrix notation, solution by elimination, determinants.

*Lectures, 4 hours per week; tutorial, 1 hour per week.*

Prerequisite: grade 12 mathematics credit.

Note: Not open to students with any university mathematics credit other than an elementary statistics course unless it is a requirement of their program.

**MATH 1P66**

**Mathematics for computer science I**

Designed for students in computer science. Development, analysis and applications of algorithms in computation; elementary logic, proofs; graphs and trees.

*Lectures, tutorial, 4 hours per week.*

Prerequisite: one OAC mathematics credit.

**MATH 1P67**

**Mathematics for computer science II**

Designed for students in computer science. Development, analysis and applications of algorithms in combinatorial analysis; discrete probability models; recursion; limiting procedures and summation; difference equations; introduction to automata theory.

*Lectures, tutorial, 4 hours per week.*

Prerequisite: MATH 1P66.

## Mathematics

### MATH 1P90

#### Introduction to combinatorics

The pigeonhole principle; combinations, permutations and binomial coefficients; the inclusion-exclusion principle; recurrence relations; generating functions; introduction to graph theory.

*Lectures, 4 hours per week.*

Prerequisites: two OAC mathematics credits (a third OAC mathematics credit is strongly recommended).

### MATH 1P93

#### Calculus I

Review of differentiation; the Mean Value theorem; Taylor's theorem with remainder. Methods of integration with applications; the trapezoidal rule and Simpson's rule. Partial derivatives; extrema of functions of two variables via the second derivative test.

*Lectures, 4 hours per week; tutorial, 1 hour per week.*

Prerequisites: two OAC mathematics credits including OAC calculus (a third OAC mathematics credit is strongly recommended).

### MATH 1P94

#### Calculus II

Multivariable extremal problems with constraints; Lagrange multipliers. Double and triple integrals, including applications and transformation of coordinates. Numerical series, including tests of convergence. Power series. Taylor series.

*Lectures, 4 hours per week; tutorial, 1 hour per week.*

Prerequisite: MATH 1P93.

Credit will not be granted to students who have prior credit in MATH 1P95.

### MATH 1P95

#### Introductory analysis

Numerical sequences and series, including tests of convergence. Theory of continuous functions. Theory of the Riemann integral, with applications. Theory of power series; term-by-term integration and differentiation of power series; power series solutions of differential equations.

*Lectures, 4 hours per week; tutorial, 1 hour per week.*

Prerequisite: MATH 1P93.

Credit will not be granted to students who have prior credit in MATH 1P94.

### \*MATH 1P97

#### Differential and integral methods

Designed for students of Business, Biological Sciences, Economics, Earth Sciences and Urban and Environmental Studies. Elementary functions, particularly the power function, the logarithm and the exponential; the derivative and its application; integration; approximation to the area under a curve; the definite integral; partial differentiation; simple differential equations; numerical methods; and the use of computer algebra systems.

*Lectures, 4 hours per week; lab, 1 hour per week.*

Prerequisite: grade 12 mathematics or permission of the department.

Note: Not open to students with credit in any university calculus course.

### \*MATH 1P98

#### Basic statistical methods

Designed for students of Business, Biological Sciences, Economics, Geological Sciences, Physical Education and Urban and Environmental Studies. Descriptive statistics; probability distributions, estimation; hypothesis testing; non-parametric tests; Normal, chi-squared, t- and F-distributions; mean and variance tests; regression and correlation; and the use of statistical computer software.

*Lectures, 3 hours per week, lab, 1 hour per week.*

Prerequisite: grade 12 mathematics or permission of the department.

Note: Not open to students with credit in any university statistics course.

### MATH 2F00

#### Advanced calculus

Series of functions; continuous function on  $\mathbb{R}^n$ ; partial differentiation; transformations; integration theory: multiple integrals, arc length, surface area, line and surface integrals, Green's theorem, Gauss' theorem, Stokes' theorem; vectors applied to curves and surfaces in  $\mathbb{R}^n$ ; convergence of Fourier series of piecewise-smooth functions; elementary partial differential equations.

*Lectures, 4 hours per week.*

Prerequisite: MATH 1P93 and either 1P94 or 1P95.

Credit will not be granted to students who have prior credit in MATH 2F95.

### MATH 2F10

#### Linear algebra

Theory of finite-dimensional vector spaces; algebra of linear transformations; matrices and determinants; canonical forms, eigenvalues, change of basis; applications.

*Lectures, 4 hours per week, tutorial, 1 hour per week.*

Prerequisite: MATH 1P12 or permission of the department.

### MATH 2F92

#### Great moments in mathematics

Triumphs in mathematical thinking from historical times to the present. Emphasis on analytical understanding of mathematical problems from the past, with reference to the stories and times behind the people who solved them. Students will be encouraged to match wits with great mathematicians by building on their ideas and solving related problems.

*Lectures, 4 hours per week.*

Prerequisites: MATH 1P12, 1P93 and either 1P94 or 1P95.

Note: MATH 2F92 and 3F92 are offered in alternate years.

### MATH 2F94

#### Topics in geometry

Euclidean and non-Euclidean geometries using linear algebra as an analytical tool. Classical Euclidean geometry as an axiomatic system; the Euclidean plane, motions and classification of isometries, affine transformations, collineations, triangles, interiors and exteriors, Pasch's Theorem, congruence; geometry of the sphere; the Projective Plane, incidence geometry, homogeneous co-ordinates, Desargues' and Pappus' Theorems; the Hyperbolic Plane, parallel, ultraparallel and perpendicular lines.

*Lectures, 4 hours per week.*

Prerequisite: MATH 1P12 or permission of the department.

Note: MATH 2F94 is offered in alternate years.

**\*MATH 2F95****Advanced calculus for science students**

Partial differentiation; elementary complex functions; ordinary differential equations; multiple, line and surface integrals; vector calculus; elementary partial differential equations; separation of variables; Fourier series; introduction to special functions of Legendre, Laguerre, Hermite.

*Lectures, 4 hours per week.*

Prerequisites: MATH 1P93 and either 1P94 or 1P95.

Credit will not be granted to students who have prior credit in MATH 2F00.

**MATH 2F96****Mathematical probability and statistics**

Basic probability theory, simple stochastic processes, probability distributions, expectation, moments, generating functions, sums of random variables and limit theorems, sampling distributions, statistical models, point estimation, interval estimation and hypothesis testing with applications to samples from Normal, binomial and Poisson distributions, chi-square tests, non-parametric methods, bivariate Normal distribution and correlation analysis, simple linear, curvilinear and multiple regression; experimental design and analysis of variance, sampling methods, decision theory and Bayesian estimation.

*Lectures, 4 hours per week.*

Prerequisites: MATH 1P93 and either 1P94 or 1P95.

**MATH 2P20****Numerical analysis I**

Elementary techniques for solving: algebraic equations, systems of linear equations, eigenvalues and eigenvectors of matrices; numerical differentiation, integration and interpolation. Some theory of efficiency and precision of algorithms; some computer applications.

*Lectures, 4 hours per week.*

Prerequisites: MATH 1P93 and either 1P94 or 1P95; MATH 1P12 (can be taken concurrently).

**MATH 2P60****Introductory operations research**

Designed for students in administrative studies. Project management: CPM, PERT. Linear programming: formulation, graphical solution, simplex method, duality, examples. Special LP problems: transportation, assignment. The two-player zero-sum game and the minimax theorem. Elements of decision theory: utility, Bayesian models. Multiple regression. Inventory models: EOQ and generalizations. Queuing theory.

*Lectures, 4 hours per week; lab, 1 hour per week.*

Prerequisites: MATH 1P97, 1P98.

**MATH 3F00****Real and complex analysis I**

Functions of bounded variation, the Riemann-Stieltjes integral, metric spaces (in particular,  $C[a,b]$ ), approximation theorems (Stone-Weierstrass, Bernstein), fixed-point theorems and applications, inequalities, functional equations. Complex differentiation, the Cauchy-Riemann equations, convergence of complex series, integrals of analytic functions, Cauchy's integral theorem, Taylor series, Laurent series, singularities, the residue theorem and contour integration.

*Lectures, 4 hours per week.*

Prerequisite: MATH 2F00 or permission of the department.

**MATH 3F10****Basic structures of algebra**

Introduction to fundamental algebraic structures; groups, rings and fields. Topics will include fundamental theorems on subgroups and subrings, homomorphisms and quotient structures, as well as detailed discussion of important examples.

*Lectures, 4 hours per week.*

Prerequisite: MATH 1P12 or permission of the department.

**MATH 3F65****Mathematical methods for computer science**

Applied probability, Markov chains, Poisson and exponential processes, renewal theory, queuing theory, applied differential equations. Networks, graph theory, reliability theory, NP-completeness.

*Lectures, 4 hours per week.*

Prerequisites: MATH 1P12, 1P66, 1P67, 1P97.

**MATH 3F92****Algebra with applications**

Introduction to algebraic structures with emphasis on application of abstract ideas to concrete mathematical problems. Group theory will be applied to the study of symmetries and counting problems using the Polya-Burnside Theorem. Field theory will be applied to answer classical questions about trisecting angles and squaring the circle. Students will make presentations of selected topics.

*Lectures, 4 hours per week*

Restriction: Open only to BSc/BEed majors.

Prerequisite: MATH 1P12.

Note: MATH 3F92 and 2F92 are offered in alternate years.

**MATH 3F94****Differential equations**

Linear equations, series solutions, Laplace transforms and operator methods, systems of equations, basic existence theorem, Sturm-Liouville theory, Bessel and Legendre functions orthogonal polynomials, eigenvalue problems. Fourier series, simple partial differential equations and boundary-value problems.

*Lectures, 4 hours per week.*

Prerequisite: MATH 2F00 or permission of the department.

**MATH 3P20****Numerical analysis II**

Topics in matrix analysis, approximation theory (including least-squares and minimax); Legendre, Chebyshev and trigonometric functions; Gaussian quadrature; differential and partial differential equations.

*Lectures, 4 hours per week.*

Prerequisites: MATH 2P20 and either MATH 2F00 or 2F95 (the latter may be taken concurrently).

**\*MATH 3P57****Discrete event simulation**

(also offered as COSC 4P77)

Classification of simulation problems; discrete, continuous, Monte Carlo; general discrete modeling concepts; discrete

## Mathematics

system models; basic analysis techniques (sampling, estimation, inductive inference, random number generators, queuing theory, time series analysis); simulation experiments (variance reduction techniques, optimization procedures, sample size and stopping rules); modeling techniques for system inputs; verification and validation procedures; a critique of the simulation approach.

*Lectures, 3 hours per week.*

Prerequisites: COSC 1P04, MATH 1P97, 1P98, 3F65.

### MATH 3P58

#### Operations research methods A (also offered as ECON 3P58)

Principles of operations research; Lagrange multipliers, with applications to LP; network models and generalized network models; elements of dynamic programming; scheduling (criteria and algorithms); integer programming (theory and practice); elements of quadratic programming; optimization and quasi-Newton methods; discussion and analysis of selected cases.

*Lectures, 4 hours per week.*

Prerequisite: MATH 2P60.

*Note:*

*MATH 3P58, 4P58 and 3P59, 4P59 are offered in alternate years.*

### MATH 3P59

#### Operations research methods B (also offered as ECON 3P59)

Principles of modelling; decision theory, subjective probability and Bayesian statistics; simulation, sampling theory, design and analysis of experiments, discussion and analysis of selected cases.

*Lectures, 4 hours per week.*

Prerequisite: MATH 2P60 or permission of the department.

### MATH 3P91

#### Mathematics at the junior/ intermediate level

Designed for students in the concurrent Mathematics and Education program. A treatment of mathematics and its teaching and learning issues at the junior and intermediate levels. A major portion of the course will involve directed projects.  
*Lectures, 3 hours per week; seminar, 1*

*hour per week.*

Restriction: Open only to BSc/BEEd majors with a minimum of 9.0 overall credits.

### MATH 3P95

#### Experimental design

Analysis of variance; randomized block designs, Latin squares, factorial designs; Nested and Confounded designs; factorial replication; linear models; regression models; related topics.

*Lectures, 3 hours per week, lab, 1 hour per week.*

Prerequisites: MATH 2F96.

### MATH 3P96

#### Sampling theory

Theory of finite population sampling; simple random and stratified sampling; ratio and regression methods; systematic and cluster sampling; multi-stage sampling; errors in surveys; related topics.

*Lectures, 3 hours per week, lab, 1 hour per week.*

Prerequisite: MATH 2F96.

### MATH 3P97

#### Introductory topology

Introduction to metric and topological spaces; connectedness, completeness, countability axioms, separation properties, covering properties, metrization of topological spaces.

*Lectures, 4 hours per week.*

Prerequisites: MATH 2F00 and 2F10 or 3F10.

### MATH 3P98

#### Functional analysis

Introduction to the theory of normed linear spaces, fixed point theorem, Stone-Weierstrass approximation on metric spaces and preliminary applications on sequence spaces.

*Lectures, 4 hours per week.*

Prerequisites: MATH 2F10 and 3P97.

### MATH 4F02

#### Real and complex analysis II

Lebesgue integration on  $\mathbb{R}^n$ , differentiation and absolute continuity, Fubini's theorem,  $L^p$  spaces, elementary Banach space theory, Fourier series, proof of Cauchy's integral theorem. The maxi-

mum-modulus principle, the Phragmén-Lindelöf method, the Hausdorff-Young theorem, conformal mapping (linear fractional transformations, Riemann's mapping theorem, Bieberbach's conjecture); topics selected from: zeros of holomorphic functions, analytic continuation, asymptotic expansions.

*Lectures, 4 hours per week.*

Prerequisite: MATH 3F00.

### MATH 4F10

#### Topics in algebra

A treatment of several advanced topics drawn from group theory, theory of rings and modules. Galois theory, lattice theory, homological algebra and applications of algebra in geometry.

*Lectures, 4 hours per week.*

Prerequisite: MATH 3F10.

### MATH 4F16

#### Advanced topics

Topics will normally vary from year-to-year. Topics include: number theory, problems in real or complex analysis, summability theory, differential geometry, differential manifolds, algebraic topology, approximation theory, dynamical systems, foundations of mathematics.

*Lectures, 4 hours per week.*

Restriction: Consult the department regarding permission to register.

### MATH 4F21

#### Topics in advanced statistics

Topics chosen from the following areas: stochastic processes, game theory, decision theory, sampling theory, experimental design and analysis, time series, multivariate analysis.

*Lectures, 4 hours per week.*

Restriction: Consult the department regarding permission to register.

Prerequisite: MATH 2F96.

### MATH 4F51

#### Calculus of variations and integral transforms

Calculus of variations and applications. Integral transforms (Fourier, Laplace and Mellin). Linear integral equations.

*Lectures, 4 hours per week.*

Prerequisite: MATH 3F94.

**MATH 4F52****Partial differential equations**

Existence theory: Cauchy-Kowalewski theorem, distributions (generalized functions), separation of variables, equations of parabolic type, the heat equation, elliptic equations (Laplace's equation, the biharmonic equation) and applications, general theory of eigenvalues and eigenfunction expansions, Green's functions, hyperbolic equations (the wave equation, etc.), boundary-value problems.

*Lectures, 4 hours per week.*

Prerequisite: MATH 3F94.

**MATH 4P19****Theory of computation**

Turing machines, universal machines, halting problems and related unsolvable problems; recursive functions and their relations to Turing machines; some non-computable functions. Formal languages and their relation to automata; regular, context-free and context-sensitive grammars.

*Lectures, 4 hours per week.*

Prerequisite: permission of the department.

**MATH 4P20****Combinatorics**

Enumeration problems involving generating functions, recurrence relations, permutations with forbidden positions, Polya's counting theorem, Moebius inversion theorem. Graph theory: matching theory, path problems and coloring problems.

*Lectures, 4 hours per week.*

Prerequisite: permission of the department.

Note: While no specific course is an essential prerequisite, students should have competence in abstraction equivalent to that obtained by a successful completion of MATH 2F10.

**MATH 4P58****Operations research applications A**

(also offered as ECON 4P58)

Practice of operations research; investment and applications of LP to project selection, capital growth, further dynamic programming, location problems, inventory problems, cash flow as an in-

ventory problem, personnel planning, actuarial problems; discussions and analysis of selected cases.

*Lectures, 4 hours per week.*

Prerequisite: MATH 3P58 or permission of the department.

*Note:*

*MATH 4P58, 3P58 and 4P59, 3P59 are offered in alternate years.*

**MATH 4P59****Operations research applications B**

(also offered as ECON 4P59)

Applications of modelling, game theory (Nash equilibrium, two player NZS games, Nash co-operative solution and others), Shapley value, voting power, values of non-atomic games; advertising and sales forecasting in heterogeneous markets, information-theory, encoding, cryptography, security and reliability, classification and clustering, models of biological competition and military combat, discussion and analysis of selected cases.

*Lectures, 4 hours per week.*

Prerequisite: MATH 3P59 or permission of the department.



# Music

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## Officers of instruction

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### *Chair*

Peter Landey

### *Associate professor*

Peter Landey (music theory and composition)

### *Assistant professors*

Harris Loewen (ensembles, conducting, choral methods and literature)

Heather Toews (piano performance and pedagogy)

### *Lecturer*

Patricia Deby (music history and musicology)

### *Professor emeritus*

Ronald Tremain

### *Part-time instructors*

Deryck Aird (violin)

Lucas Chorosinski (organ)

Jonathan Earp (guitar)

Janice Fralick (horn)

Steven Fralick (trombone)

Mary Kraatz (flute)

Deborah Linton (voice)

Steve Pierre (clarinet)

Greg Robinson (trumpet)

Stephen Rosenthal (saxophone)

Laura Thomas (percussion)

Suzanne Thomas (harp)

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## General information

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### *Thistle West 139*

The objective of the Music program is to train literate and versatile musicians capable of contributing in a valuable way to music in society. The department offers courses of study leading to the degrees of BMus (honors); BA (pass)--single major; BA (honors) combined major and BA (pass) combined major.

Students in all degree programs take core courses in music history, theory and composition, general musicianship and choral ensemble. Students may pursue areas of special interest such as composition, applied music, topics in music education and musicology. In the combined major programs, students may combine Music with another subject.

## Bachelor of Music (honors) program

The objective of the BMus (honors) program is to produce critically aware musicians with a broadly based musical education. BMus students receive training in applied music, history and theory and composition during the first three years of the program. In their fourth year, students may pursue specialized interests in musicology, composition and applied music. Students may elect to write an honors thesis.

## Facilities

Facilities in the Music department include a choral studio and library, a Boesendorfer concert grand piano, Steinway, Yamaha and Heintzman grand pianos, a two-manual Dowd harpsichord, a Casavant chamber organ and a set of percussion instruments. Individual sound-proofed practice rooms are available for students studying applied music and keyboard skills.

Concerts, recitals and performance classes are regularly held in the 543-seat Theatre, Brock Centre for the Arts, and in Martin Luther Chapel, Concordia Lutheran Theological Seminary. A Kingham and Pole seven-rank pipe organ is located in the Chapel.

The music listening room, located on the fifth floor of the Library, contains 24 individual study carrels. There is a variety of listening equipment including tape recorders, video cassette recorders and compact disc and record players. The Library has an extensive collection of records, compact discs and video tapes and maintains a substantial collection of music literature, collected editions and scores and specialized music journals.

The department is developing a computer music laboratory which includes MacIntosh and IBM compatible computers. Students have access to midi keyboards and to ear-training, advanced sequencing and notation programs.

## Public events

The Music program offers a regular series of events open to students and the general public. These include an evening concert series, regular noon-hour concerts and presentations and a guest lecture series featuring distinguished theorists, musicologists and composers. Students frequently attend masterclasses by distinguished visiting artists. Exposure to a variety of concerts and first-class artists and scholars provides a stimulating environment for students.

## Ensembles

The department sponsors several choral ensembles and a wind ensemble. Participation in choral ensemble is required of all majors and combined majors as well as all students enrolled in applied music courses. The choral and instrumental ensembles are open to any member of the University or the general public who may wish to participate on a credit or non-credit basis and who successfully completes an audition.

## Entrance requirements for music majors

Prospective majors must possess a level of musical literacy equivalent to Royal Conservatory Grade II rudiments as well as the necessary aural skills to complete the course requirements in Music. It is recommended that prospective majors possess a level of keyboard proficiency equivalent to Royal Conservatory grade IV.

Admission as a major will depend on the successful completion of tests in basic rudiments and aural skills. Prospective majors must arrange an interview with a Music department faculty member upon application to the University. Details concerning interviews, tests and auditions may be obtained from the department secretary.

An audition on a solo instrument or voice is required of all applicants to the BMus program and of all students wishing to take electives in applied music.

Auditions are normally held in May and June of each year. The recommended level for admission into MUSI 1F92 is at least Royal Conservatory grade VIII or its equivalent. Applied music students who study with an approved non-resident instructor should be prepared to cover additional travel and instruction fees. Part-time students studying applied music are required to enrol concurrently in at least one other credit in Music as well as in choral ensemble.

#### Academic requirements

a. Students in the BMus program must choose one principal study in applied music. If applied music is not taken in successive years, students must reaudition before proceeding to the next year of applied music.

b. To proceed to year 4 of the BMus (honors) and BA (honors) combined, students must attain a 70 percent major average. BMus students must also attain a minimum of 60 percent in all music courses.

Students in the BA (pass) and BA (pass) combined programs must attain a minimum of 60 percent major average.

c. Admission to the BMus program with transfer credits from other universities requires an overall average of 70 percent in music courses. Transfer credit will not normally be granted for courses with less than a grade of 60 percent.

d. Transfer students must take the final five credits of the program at Brock.

e. Students in all MUSI programs, as well as students enrolled in applied music courses, must enrol in Choral Ensemble in each year of the program. MUSI 3P83 and 4P83 may be fulfilled on a credit or audit basis.

f. The University requires that all students in Humanities fulfil the following: one social science context credit; one

science context credit; one credit in a language other than English.

g. Note: Music majors may take five and one-half credits in any year of the program without approval from the Dean.

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#### Bachelor of Music - honors program

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The BMus (honors) program requires fourteen MUSI credits.

*Year 1*  
MUSI 1F50, 1F90, 1F92, 1P05, 1P83; one science or social science context credit.

*Year 2*  
MUSI 2F90, 2F92, 2P05, 2P83; one credit from MUSI 2P51, 2P52, 3P51, 4P51; one science or social science context credit (whichever was not completed in year 1).

*Year 3*  
MUSI 3F92, 3P90, 3P91; one credit from MUSI 2P51, 2P52, 3P51, 3P52, 3P95, 4P51, 4P52, 4P53; participation in choral ensemble MUSI 3P83 (credit or audit); one humanities language credit; one-half elective credit. (Students who audit MUSI 3P83 must complete an additional half elective credit.)

*Year 4*  
Three MUSI credits at least two of which must be numbered 3(alpha)90 or above; participation in choral ensemble MUSI 4P83 (credit or audit); one and one-half elective credits. (Students who audit MUSI 4P83, must complete an additional half credit elective.)

*Notes:*  
1. Electives: It is strongly recommended that students develop secondary areas of interest. Students are encouraged to take a second language credit (in addition to the Humanities language requirement) in GERM, FREN, ITAL or LATI.

2. At least three credits numbered 3(alpha)90 or above must be included in all honors programs.

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#### BA Pass (single major) program

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A total of eight MUSI credits are required in the following recommended sequence:

*Year 1*  
MUSI 1F50, 1F90, 1P05, 1P83; one science or social science credit; one humanities language credit.

*Year 2*  
MUSI 2F90, 2P05, 2P83; one credit from MUSI 2P51, 2P52, 3P51, 4P51; one science or social science context credit (whichever was not completed in year 1); one elective credit.

*Year 3*  
MUSI 3P90, 3P91; one credit from MUSI 2P51, 2P52, 3P51, 3P95, 4P51, 4P52, 4P53; MUSI 3P83 (credit or audit); two and one-half elective credits (Students who audit MUSI 3P83 must complete an additional half elective credit).

*Note:*  
1. At least three credits numbered 2(alpha)90 or above must be included in all pass programs.

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#### Combined major programs

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##### Honors

Eight MUSI credits are required:

MUSI 1F50, 1F90, 1P05, 1P83, 2F90, 2P05, 2P83; one credit from MUSI 2P51, 2P52, 3P51, 4P51; two credits from MUSI 3F99, 3P95, 4F85, 4F92, 4F99, 4P51, 4P52, 4P53; participation in choral ensemble MUSI 3P83 and 4P83 (credit or audit).

##### Pass

Six MUSI credits are required:

MUSI 1F50, 1F90, 1P05, 1P83, 2F90, 2P05, 2P83; one credit in MUSI 2P51, 2P52, 3P51, 3P52, 4P51, 4P52, 4P53.

## Music

### Notes:

1. Students enrolled in a combined major program should refer to the appropriate co-major calendar entry for co-major requirements.

2. At least three credits numbered 3(*alpha*)90 or above must be included in all honors degrees.

3. At least three credits numbered 2(*alpha*)90 or above must be included in all pass degrees.

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### Language requirement for humanities majors

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Students in the music program, including single and combined majors in Music, are required to complete one credit in a language other than English. Where half credit courses are used to satisfy the requirement, both half credits must be in the same language. It is recommended that students fulfil this requirement by year 2.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

#### MUSI 1F00

##### Music in popular culture

Survey of developments in blues, jazz, rock and related genres of popular music. *Lectures, seminar, 3 hours per week; listening assignments.*

Major credit will not be granted to MUSI majors.

#### MUSI 1F50

##### History of music from medieval to modern times

Historical survey of styles in Western art music; analysis of representative musical compositions with assigned readings from secondary literature.

*Lectures, 3 hours per week.*

Prerequisite: a level of musical literacy equivalent to Royal Conservatory grade II rudiments or permission of the instructor.

#### MUSI 1F90

##### Theory and composition I

Integrated study of modal counterpoint, common practice harmony and composition.

*Lectures, seminar, 3 hours per week.*

Prerequisite: successful completion of a placement test equivalent to Royal Conservatory grade II rudiments.

Co-requisite: MUSI 1P05.

#### MUSI 1F92

##### Applied music I

Individual instruction in one of the following: piano, harpsichord, organ, voice, classical guitar or any approved concert band and orchestral instrument.

*One hour private instruction per week; required participation in performance seminars, chamber ensembles and student recitals.*

Prerequisite: A solo audition in May or June of the preceding academic year.

Co-requisite: choral ensemble

Note: Lesson fee required; consult department.

For further details, see page 224 under entrance requirements.

#### MUSI 1P05

##### Aural and keyboard skills I

Aural perception of materials covered in MUSI 1F90 through sight-singing, score-reading, dictation and keyboard harmony.

*Lab, 2 hours per week over two terms, individual keyboard tutorial, each week.*

Prerequisite: successful completion of a placement test equivalent to Royal Conservatory grade II rudiments.

#### MUSI 1P11

##### Listening to music I

A music appreciation course for students with little or no formal instruction in music. Discussion of basic musical ma-

terials, instrumentation, forms and techniques for listening critically. Development of a listening repertoire of representative compositions from the Middle Ages to the end of the Baroque era (c. 1750).

*Lectures, seminar, 3 hours per week.*

Major credit will not be granted to MUSI majors or to those who have prior credit in MUSI 1F10 or 1F50.

#### MUSI 1P12

##### Listening to music II

A music appreciation course for students with little or no formal instruction in music. Discussion of basic musical materials, instrumentation, forms and techniques for listening critically. Development of a listening repertoire of representative compositions from the Early Classical era (c. 1740) to the present day.

*Lectures, seminar, 3 hours per week.*

Major credit will not be granted to MUSI majors or to those who have prior credit in MUSI 1F10 or 1F50.

#### MUSI 1P83

##### Choral ensemble I

Selected choral literature in rehearsal and performance; development of sight-singing and interpretive skills. Participation in one of the following two ensembles: 1) mixed chorale; 2) women's chorus. Concert uniform required. Score-use fee for non-credit participants; consult the department. Competent vocalists from the University and community are encouraged to audition.

*Rehearsals, 3 hours per week for two terms, participation in dress rehearsals and concert performances as required.*

Prerequisite: Pitch-matching skills. (Sight-singing skills strongly recommended.) Entrance by audition.

#### MUSI 1P84

##### Wind ensemble I

Selected wind literature in rehearsal and performance; development of sight-reading, technical and interpretive skills. Competent instrumentalists from the University and community are encouraged to audition.

*Rehearsals, 2 hours per week for two terms, participation in dress rehearsals and concert performances are required.*

Prerequisite: Previous instruction and ensemble experience. Entrance by audition; consult the department.

## MUSI 2F90

**Theory and composition II**

Integrated study of tonal counterpoint, common practice harmony and composition.

*Lectures, seminar, 3 hours per week.*

Prerequisite: MUSI 1F90 or permission of the instructor.

Co-requisite: MUSI 2P05.

## MUSI 2F92

**Applied music II**

A continuation of individual instrumental or vocal study.

*One hour private instruction per week; required participation in performance seminars, chamber ensembles and student recitals.*

Prerequisite: MUSI 1F92 or its equivalent by audition.

Co-requisite: choral ensemble.

Note: Lesson fee; consult department.

## MUSI 2M70-2M74

**Selected topics in music education**

The philosophical and pedagogical bases of selected approaches to music education, which may include creative, Dalcroze, Orff and Kodaly approaches and their respective practical application to the classroom situation in Canadian schools.

## MUSI 2M90-2M99

**Special topics**

A selected topic in music literature involving historical, musicological and analytical or performance issues.

## MUSI 2P05

**Aural and keyboard skills II**

Aural perception of materials covered in MUSI 2F90 through sight-singing, score-reading, dictation and keyboard harmony. *Lab, 2 hours per week over two terms, individual keyboard tutorial each week.*

Prerequisite: MUSI 1F90.

Co-requisite: MUSI 2F90.

## MUSI 2P40

**Vocal techniques**

Practical and theoretical instruction in vocal technique.

*Lectures, lab, 3 hours per week.*

Prerequisite: Permission of the instructor. Audition required.

Co-requisite: Choral ensemble.

Credit will not be granted to students with prior credit in MUSI 1F92, 2F92.

## MUSI 2P41

**Woodwind techniques**

Practical and theoretical instruction in woodwind instruments.

*Lectures, lab, 3 hours per week.*

Prerequisite: Royal Conservatory grade II rudiments and permission of the instructor.

## MUSI 2P42

**Brass techniques**

Practical and theoretical instruction in brass instruments.

*Lectures, lab, 3 hours per week.*

Prerequisite: Royal Conservatory grade II rudiments and permission of the instructor.

## MUSI 2P43

**Percussion techniques**

Practical and theoretical instruction in percussion instruments.

*Lectures, lab, 3 hours per week.*

Prerequisite: Royal Conservatory grade II rudiments and permission of the instructor.

## MUSI 2P51

**History of music in the Classical era**

Intensive study of styles, forms and genres from the pre-Classical era (c. 1740) to Beethoven's late works (c. 1827) through the analysis of selected compositions and readings.

*Lectures, seminar, 3 hours per week.*

Prerequisites: MUSI 1F50 and 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in MUSI 2F50.

## MUSI 2P52

**History of music in the Romantic era**

Intensive study of styles, forms and genres from Schubert (c. 1820) to Wolf (c. 1900) through the analysis of selected compositions and readings.

*Lectures, seminar, 3 hours per week.*

Prerequisites: MUSI 1F90 and either 2F50 or 2P51 or permission of the instructor.

Credit will not be granted to students who have prior credit in MUSI 3F50.

## MUSI 2P83

**Choral ensemble II**

Selected choral literature in rehearsal and performance; further development of sight-singing and interpretive skills.

Participation in one of the following two ensembles: 1) mixed chorale; 2) women's chorus. Concert uniform required. Score-use fee for non-credit participants; consult the department. Competent vocalists from the University and community are encouraged by audition.

*Rehearsals, 3 hours per week for two terms, participation in dress rehearsals and concert performances as required.*

Prerequisite: MUSI 1P83 and basic sight-singing skills. Entrance by audition.

Credit will not be granted to students who have prior credit in MUSI 282.

## MUSI 2P84

**Wind ensemble II**

Selected wind literature in rehearsal and performance; development of sight-reading, technical and interpretive skills.

*Rehearsals, 2 hours per week for two terms, participation in dress rehearsals and performances are required.*

Prerequisite: MUSI 1P84. Entrance by audition.

## MUSI 2P93

**Conducting and score-reading**

Introduction to historical, theoretical and practical aspects of choral and instrumental conducting. Reading of open scores at the keyboard. Topics include: basic patterns, baton and left-hand techniques, notational terminology, instrumental transpositions.

*Lectures, seminar, 3 hours per week; field assignments as required.*

Prerequisites: MUSI 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in MUSI 2F95 or 2F96.

## MUSI 2P94

**Choral methods**

Study and practice of vocal and ensemble techniques for children's, youth and adult choirs. Topics include: vocal development, physiology and training; audition and rehearsal procedures, score selection and preparation.

*Lectures, seminar, 3 hours per week; field assignments as required.*

Prerequisite: MUSI 2P93 or permission of the instructor.

Credit will not be granted to students who have prior credit in MUSI 2F95 or 2F96.

## Music

### MUSI 2P97

#### **Choral literature I: Mixed-voice repertoire**

Survey and study of selected choral literature for youth and adult choirs from the Renaissance to the present. Topics include: period performance practices, repertoire sources, selection and analysis.

*Lectures, seminar, 3 hours per week.*

Prerequisites: MUSI 1F90 and 1F50 or permission of the instructor.

Credit will not be granted to students who have prior credit in MUSI 2F96.

### MUSI 2P98

#### **Choral literature II: treble-voice repertoire**

Survey and study of selected choral literature for children's and women's choirs with emphasis on compositions from the 19th and 20th centuries. Topics include: repertoire sources, selection and analysis.

*Lectures, seminar, 3 hours per week.*

Prerequisites: MUSI 1F50 and 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in MUSI 2F95.

### MUSI 3F20

#### **Piano pedagogy and literature**

This course is divided into two concurrent parts: 1) an examination of piano teaching techniques used in the beginning and elementary levels of instruction, including discussion of method books, elementary repertoire and technique; 2) selected topics in 18th and 19th century keyboard literature with critical analysis.

*Lectures, seminar, 3 hours per week.*

Prerequisites: minimum Royal Conservatory grade VIII practical; MUSI 1F50, 1F90 and permission of the instructor.

### MUSI 3F92

#### **Applied music III**

A continuation of individual instrumental or vocal study.

*One hour of private instruction per week; required participation in performance seminars, chamber ensembles and student recitals.*

Prerequisite: MUSI 2F92.

Co-requisite: choral ensemble.

Note: Lesson fee; consult department.

### MUSI 3F99

#### **Honors tutorial**

Intensive independent study in a theoretical, historical or creative area in which the student has developed a particular interest; to be chosen in consultation with a faculty member willing to supervise that study.

Restriction: Consult the department regarding permission to register.

Prerequisite: a written proposal must be approved by the department before registration.

### MUSI 3P51

#### **History of music in the Baroque era**

Intensive study of styles, forms and genres from Monteverdi (c. 1600) to Bach (c. 1750) through analysis of selected compositions and readings.

*Lectures, seminar, 3 hours per week.*

Prerequisites: MUSI 1F50 and 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in MUSI 2F50.

### MUSI 3P52

#### **History of music in the 20th century**

Intensive study of styles, forms and genres from Mahler (c. 1890) to the present day, through the analysis of selected compositions and readings.

*Lectures, seminar, 3 hours per week.*

Prerequisites: MUSI 1F50 and 1F90 or permission of the instructor.

Credit will not be granted to students who have prior credit in MUSI 3F50.

### MUSI 3P83

#### **Choral ensemble III**

Selected choral literature in rehearsal and performance; further development of sight-singing and interpretive skills; individual project. Participation in one of the following two ensembles: 1) mixed chorale; 2) women's chorus. Concert uniform required. Score-use fee for non-credit participants; consult department.

*Rehearsals, 3 hours per week for two terms, participation in dress rehearsals and concert performances as required.*

Prerequisites: MUSI 2P83 and intermediate sight-singing skills. Entrance by audition. Previous or concurrent enrolment in MUSI 2P93 or 2P94 recommended.

### MUSI 3P84

#### **Wind ensemble III**

Selected wind literature in rehearsal and performance; development of sight-reading, technical and interpretative skills.

*Rehearsals, 2 hours per week for two terms, participation in dress rehearsals and performances as required.*

Prerequisite: MUSI 2P84. Entrance by audition.

### MUSI 3P90

#### **20th century approaches to music theory**

Introduction to Schoenberg's theories of thematic development, Schenkerian voice-leading analysis, twelve-tone and elementary set theory, theories of rhythm and form.

*Lectures, seminar, 3 hours per week.*

Prerequisite: MUSI 2F90.

Credit will not be granted to students who have prior credit in MUSI 3F91.

### MUSI 3P91

#### **20th century compositional techniques**

Study of the 20th century music procedures through analysis of selected works; emphasis on original composition using a variety of techniques.

*Lectures, seminar, 3 hours per week.*

Prerequisite: MUSI 3P90.

Credit will not be granted to students with prior credit in MUSI 3F91.

### MUSI 3P95

#### **Musical aesthetics**

An historical survey of philosophies of music from Pythagoras and Aristoxenus to the present.

*Lectures, seminar, 3 hours per week.*

Prerequisite: A second year course in music or philosophy.

### MUSI 4F85

#### **Composition**

Analysis and writing in extended forms. *Individual tutorial each week.*

Restriction: Consult the department regarding permission to register.

Prerequisites: MUSI 3P90, 3P91 and permission of the instructor.

## MUSI 4F92

**Applied music IV**

A continuation of individual instrumental or vocal study.

*One hour private instruction per week; compulsory participation in performance classes, one solo public recital, chamber ensembles.*

Restriction: Consult the department regarding permission to register.

Prerequisite: Minimum 70 percent standing in MUSI 3F92.

Co-requisite: choral ensemble.

Note: Lesson fee; consult department.

## MUSI 4F99

**Honors thesis**

Intensive independent study in an historical, theoretical or creative area in which the student has developed a particular interest; to be chosen in consultation with a faculty member willing to supervise that study.

Restriction: Consult the department regarding permission to register.

Prerequisite: a written proposal must be approved by the department before registration.

## MUSI 4P51

**History of music in the Renaissance**

Intensive study of styles, forms and genres from the time of Machaut (c. 1350) to the early works of Monteverdi (c. 1600), through analysis of selected compositions and readings.

*Lectures, seminar, 3 hours per week.*

Prerequisite: MUSI 1F50 or permission of the instructor.

Credit will not be granted to students who have prior credit in MUSI 4F50.

## MUSI 4P52

**18th century Italian opera**

Detailed study of *opera seria*, *opera buffa* and the *dramma giocoso* from the works of Handel to late Mozart.

*Lectures, seminar, 3 hours per week.*

Prerequisites: MUSI 1F50, 2P51 and 3P51 or permission of the instructor.

## MUSI 4P53

**Methodology and research in musicology**

Examination of sources for music research and a historical survey of musicological methodologies.

*Lectures, seminar, 3 hours per week.*

Prerequisites: MUSI 1F50 and one credit from MUSI 2P51, 2P52, 3P51, 3P52, 4P51 or 4P52.

## MUSI 4P83

**Choral ensemble IV**

Selected choral literature in rehearsal and performance; further development of sight-singing and interpretive skills; individual projects. Participation in one of the following two ensembles; 1) mixed chorale; 2) women's chorus. Concert uniform required. Score-use fee for non-credit participants; consult department.

*Rehearsals, 3 hours per week for two terms, participation in dress rehearsals and concert performances as required.*

Prerequisite: MUSI 3P83 and advanced sight-singing skills. Entrance by audition. Previous or concurrent enrolment in MUSI 2P93 or 2P94 recommended.

## MUSI 4P84

**Wind ensemble IV**

Selected wind literature in rehearsal and performance; development of sight-reading, technical and interpretive skills.

*Rehearsals, 3 hours per week for two terms, participation in dress rehearsals and concert performances as required.*

Prerequisite: MUSI 3P84. Entrance by audition.

# Neuroscience

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## Officers of instruction

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### *Co-ordinators*

R. Peter Rand, Biological Sciences  
Dawn E. Witherspoon, Psychology

### *Participating Faculty*

H. Willard Bradley, Psychology  
David DiBattista, Psychology  
William H. Cade, Biological Sciences  
Robert L. Carlone, Biological Sciences  
Jane Dywan, Psychology  
Arthur H. Houston, Biological Sciences  
J. Cameron Lewis, Biological Sciences  
A. Joffre Mercier, Biological Sciences  
Ralph D. Morris, Biological Sciences  
Robert D. Ogilvie, Psychology  
Peter Ramm, Psychology  
R. Peter Rand, Biological Sciences  
Sidney J. Segalowitz, Psychology  
Paul D. Tyson, Psychology  
Dawn E. Witherspoon, Psychology

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## General information

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Neuroscience, the study of behavior and its underlying neural mechanisms, is studied in psychology, biology and other departments at many universities, but there is an increased tendency to offer neuroscience as a specialized major program in North America and Europe. The program in Neuroscience at Brock represents a curriculum that combines selected courses from the disciplines of psychology and biology that illustrate behavioral, cellular and physiological approaches to examining the nervous system. The program is specifically designed to permit integration of information derived experimentally from both disciplines to gain a better understanding of the relationships between nervous function and behavior. The

Neuroscience program provides information and skills necessary for careers in the health and behavioral sciences. It also provides a firm basis for graduate studies in the neurosciences and depending on choice of courses, prepares the student for entry into medicine, dentistry, chiropractic and physical or occupational therapy.

Candidates in the Neuroscience program are reminded of the University regulation (page 32) that they will receive a BSc or a BA degree depending on whether the majority of their credits are in sciences or arts, respectively.

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## Honors program

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### *Year 1*

BIOL 1F90; PSYC 1F90; CHEM 1P80, and 1P81 or CHEM 1P90 and 1P91; one humanities context credit; one elective credit (see Note).

### *Year 2*

BIOL 2F01, 2P05, 2P91; PSYC 2F23, 2F36; one elective credit.

### *Year 3*

BIOL 3P34, 3P84; one credit from BIOL 3P22, 3P28, 3P50 or 3P51, 3P60, 3P64, 3P80, BCHM 3P01 or 3P02, 3P05; PSYC 3F40; one credit from PSYC 2F20, 2F35, 2F91, 3F45, 3F91, 3P67, 3P68, 3P90 or 3P94, 3P92, 3P98, 3P99; one elective credit.

### *Year 4*

BIOL 4F90 and 4F91 or, 4F92 and one credit from the year 3 BIOL optional courses or, PSYC 4F91 and 4P92, 4P93; one credit from BIOL 4P28, 4P34, 4P52, 4P56, 4P60, 4P64; one credit from PSYC 3F91, 3P92, 3P98, 3P99, 4F02; one elective credit.

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## Pass program

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Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

### *Note:*

Courses in neurobiology and electrophysiology rely on some elementary physics. PHYS 1F20 or 1F90 is recommended.

# Philosophy

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## Officers of instruction

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### Chair

Martha Husain

### Professors

John R.A. Mayer  
Debabrata Sinha

### Associate professors

Richard S.G. Brown  
David L. Goicoechea  
Martha Husain  
Robert W. Malone  
Murray L. Miles  
George J. Nathan

### Assistant professor

Ravindra Raj Singh

### Professors emeriti

G. Mervyn C. Sprung  
John H. Nota

## General information

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### Schmon Tower 1128

Philosophy, defined as the pursuit of wisdom, encompasses the exploration of the nature of reality, consciousness, values, knowledge, reason, argument and evidence. At Brock the undergraduate studies not only the primary texts of the Western philosophical tradition, but also major texts of Indian and Chinese thought. Students are encouraged to investigate, express and develop their own views and values.

## Honors program

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The following courses are required of all Philosophy majors: one credit from PHIL 1F90, 1F91, 1F93, 1F94; PHIL 2F01, 2F02 and one-half credit from PHIL 2F91, 2P12, 2P13, 2P16, 2P17;

PHIL 2P25 and 2P26 are strongly recommended for all majors.

Please note that third-year courses are restricted to students with at least three second-year university credits or the permission of the instructor.

Typical course pattern:

### Year 1

One credit from PHIL 1F90, 1F91, 1F93, 1F94; one social science and one science context credit; two elective credits (see Note).

### Year 2

PHIL 2F01, 2F02; one other PHIL credit; two elective credits, of which one must be approved by the department (see Note).

### Year 3

Three PHIL credits; two elective credits, of which one must be approved by the department.

### Year 4

Three PHIL credits numbered 3(*alpha*)90 or above; two elective credits, of which one must be approved by the department.

Some year 4 courses will be offered conjointly with a correspondingly numbered year 5 course.

### Note:

#### Language requirement for humanities majors

Philosophy majors must complete a credit in one language other than English (classical or modern), within year 1 or year 2. Where half credit courses are used to satisfy the requirements, both half credits must be in the same language.

## Pass program

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Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

## Combined major program

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Students wishing to major in Philosophy and in one other discipline are required to complete at least five PHIL credits including PHIL 2F01, 2F02 and one-half credit from PHIL 2P12, 2P13, 2P16, 2P17 or 2F91 for a pass degree and at least seven PHIL credits (including the required ones) for an honors degree.

## Master of Arts (MA) program

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A master's program is offered, focussed on two areas: recent and contemporary European thought and Asian (especially Indian) thought. Candidates should have an honors BA in Philosophy; those with a pass BA or a degree in another discipline will be required to take additional courses. Students may choose either to complete two credits and write a thesis; or to complete four credits and write a major essay.

Graduate credits are to be obtained by completing courses designated at the 5(*alpha*)00 level. A course previously taken for 4(*alpha*)00 level credit may not be retaken for graduate credit.

The graduate offerings in any given year will be selected from:

- |     |   |
|-----|---|
| I   | Studies in 19th century philosophy: Hegel, Kierkegaard, Nietzsche, Marx, Schopenhauer.  |
| II  | Contemporary studies: Husserl, Heidegger, Sartre, Marcel, Buber, Scheler, Merleau-Ponty, Gadamer, Ricoeur and some contemporary European schools such as Structuralism, the Frankfurt School, Post-Modernism. |
| III | Eastern philosophy: Upanishadic thought; texts from the six orthodox schools of Indian philosophy, especially Advaita Vedanta;  |



## Philosophy

Indian Buddhist traditions, especially Mahayana.

- IV Comparative studies: comparison of Eastern and Western traditions with respect to problems of being, knowledge, person, values and philosophical method.

In addition, from time to time, graduate half credit courses will be offered in the following topics: issues in recent Anglo-American (Analytic) philosophy, studies in Classical philosophy (pre-Socratics, Plato and/or Aristotle), Early Modern philosophy (Descartes, Hume, Kant), Process philosophy (Bergson, Whitehead, Hartshorne). While these courses fall outside the focus of specialization in the graduate program, they are useful elements of the honors program and are the special strengths of individual members of the department.

In addition, there are tutorial, research and thesis courses at the graduate level. For details, see Graduate Calendar or contact the graduate officer or the chair of the department.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details or consult the department for detailed descriptions of all courses offered in 1993-94.

All courses numbered 1F90 through 1F94 are introductory PHIL courses. Though different in content and emphasis, PHIL 1F93 and 1F94 are no more

advanced than 1F90 and 1F91. Normally a student will not be permitted to take more than one introductory course.

#### PHIL 1F90

##### **Introduction to philosophy: philosophical classics and contemporary life**

Contemporary problems viewed through a variety of philosophical writings. Students are encouraged to formulate and examine their own beliefs about freedom, knowledge, religion, love and questions of right and wrong.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 1F91, 1F93 or 1F94.

#### PHIL 1F91

##### **Introduction to philosophy**

Philosophies of human nature. How do we see ourselves? Who are we? What are we? A critical analysis and evaluation of classical and contemporary views of human nature from a variety of philosophical and religious traditions.

*Lectures, seminar, 3 hours per week.*

Note: Enrolment limited to 200 students. Credit will not be granted to students who have prior credit in PHIL 1F90, 1F93 or 1F94 except with permission of the department.

#### PHIL 1F93

##### **Introduction to philosophy: the foundations of the present**

An attempt to place the philosophical issues which confront the reflective individual today in their historical context by examining the teachings and arguments which shape our views of such matters as body and soul, life after death, truth and knowledge, faith and moral responsibility.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 1F90, 1F91 or 1F94.

#### PHIL 1F94

##### **Introduction to philosophy: philosophical problems**

The central problems of philosophy as living questions for reflection, dialogue and debate, including: Is the external world really there? Does God exist? Can I really know anything? What is a per-

son? Is everything permissible? Can my life have meaning?

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 1F90, 1F91 or 1F93.

#### PHIL 2F01

##### **Ancient Greek philosophy**

The beginnings of Western civilization in the thought of the great sages of Ancient Greece. These early philosophers set Western civilization on a new and distinctive course, which has resulted in our contemporary scientific-technological way of life. We can win an understanding of our present situation only by tracing it back to its roots.

*Lectures, seminar, 3 hours per week.*

#### PHIL 2F02

##### **Early Modern philosophy**

The classical philosophers of the 17th and 18th centuries will be studied primarily in the writings of the Continental Rationalists (Descartes, Spinoza, Leibniz) and of the British Empiricists (Locke, Berkeley, Hume).

*Lectures, 3 hours per week.*

#### PHIL 2F05

##### **Introduction to ethics**

The central problems of ethics including such problems as egoism, relativism, ethical nihilism, emotivism and responsibility; and selected major thinkers and a variety of normative traditions.

*Seminars, 3 hours per week.*

#### PHIL 2F91

##### **Religion and philosophy: comparative studies**

A study of how religion and philosophy are related to each other in some major traditions of the East and the West (Hinduism, Buddhism, Judaism, Christianity) by studying some typical approaches to such basic themes as God, man, time, truth, freedom.

*Lectures, 3 hours per week.*

Prerequisite: university credit in PHIL or a discipline appropriately related to the course content or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 311.

PHIL 2F93

**Philosophical psychology**

The philosophical and historical foundations of Freudian and post-Freudian theories concerning the nature of the human psyche. Among the theories and theorists to be dealt with are: exorcism (Gassner), animal magnetism (Mesmer), the school of Nancy (Blenheim), Charcot, Freud, Jung and Adler.

*Lectures, seminar, 3 hours per week.*

Prerequisite: university credit in PHIL or a discipline appropriately related to the course content or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 313.

PHIL 2F94

**The philosophy of love**

A consideration of the question 'What is love?' in such philosophical texts as those of Plato, Aquinas, Kierkegaard and Scheler and in literary figures of the students' choice, e.g., Byron, Dante, Shakespeare and Goethe.

*Lectures, seminar, 3 hours per week.*

Prerequisite: university credit in PHIL or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 312.

PHIL 2F95

**Bioethics, an inquiry into selected issues**

(also offered as BIOL 2F95)

An interdisciplinary course that focusses on value conflicts and moral dilemmas in biology and medicine. A major component is the discussion of specific case studies in areas such as reproductive interventions, medical experimentation, concepts of 'health' and 'disease', modification of behavior, lifestyle choices, allocation of scarce or expensive medical resources and death and dying. May count as an elective, but not as a major course in a biology or biology combined program.

*Lectures, seminar, 3 hours per week.*

Prerequisite: university credit in BIOL or PHIL or permission of the instructor.

PHIL 2F96

**Philosophy of man**

Major philosophical orientations of the concept of man--the term 'man' being understood in the generic sense of human

being (and not in the restricted sense of human male)--across the Western and some Eastern traditions. Examination of basic issues involved in reaching a philosophical understanding of human nature and its place in the scheme of things. Focus on the notion of the person and on contemporary philosophical anthropology.

*Seminars, 3 hours per week*

Prerequisite: university credit in PHIL or a discipline appropriately related to the course content or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 315.

PHIL 2M90-2M92

**Selected topics in philosophy**

Topics, chosen to reflect areas of occasional interest, which are not represented in the regular program of studies. Proposals from students are welcome.

*Lectures, seminar, 3 hours per week.*

PHIL 2P12

**Indian philosophy: an introduction to Hindu thought**

Hindu thought beginning with the Vedic myths, through the Upanishads and the Bhagavad Gita to the systems of the Vedanta. Topics include: Karma, reincarnation, altered states of consciousness, Maya, the problem of knowledge, the role and nature of God, the theory and practice of yoga.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 192.

PHIL 2P13

**Indian philosophy: an introduction to Buddhist thought**

Buddhist thought from Prince Siddhartha's enlightenment and subsequent Deer Park Sermon (the basis of Hinayana) through the Perfection of Wisdom to Madhyamika Buddhism (the Mahayana representative) to Zen (the silence of the Buddha). Topics include: Nirvana, non-self, one hand clapping.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 192.

PHIL 2P14

**The beginnings of Existential thinking**

The sources of both theistic and atheistic

lived philosophy in such figures as: Kierkegaard, Nietzsche and Dostoyevski.

*Seminars, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 206.

PHIL 2P15

**The growth of Existential thinking**

A study of the work of such philosophers as: Scheler, Heidegger, Marcel and Sartre.

*Seminars, 3 hours per week.*

Prerequisite: PHIL 2P14 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 206.

PHIL 2P16

**Early Chinese philosophy**

The development of Chinese philosophy from its humanistic beginnings through the teachings of Confucius, Mencius, Lao-Tzu, Chuang-Tzu and later neo-Confucians and Taoists.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 208.

PHIL 2P17

**Introduction to Chinese Buddhism**

The development of Buddhism in China from the seven early schools through the philosophy of Hwa Yen and the later Ch'an or Zen schools.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 208.

PHIL 2P18

**Introduction to post-Modernism**

A study of the origin and development of postmodern thinking with particular reference to the issues of ethics and the role of women. Selected writers may include Nietzsche, Derrida, Levinas, Irigaray, Kristeva, Cixous and Wyschogrod.

*Seminars, 3 hours per week.*

PHIL 2P25

**Introduction to logic**

Modern deductive logic. The course objective will be to develop the ability to analyze arguments in order to determine their worth. Arguments will be symbolized in order to clarify their form and to determine their validity or invalidity.

*Lectures, 3 hours per week.*

## Philosophy

### PHIL 2P26

#### **Introduction to the philosophy of science**

An historical introduction to the fundamental concepts of science; an examination of the nature of hypotheses, laws and theories and contemporary philosophical approaches to the nature of scientific methodology.

*Lectures, 3 hours per week.*

### PHIL 2P31

#### **The philosophy of education: the history of Western educational philosophy**

Educational ideals from Plato to the present day. Students will come to appreciate the highly divergent objectives ascribed to education over the centuries.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 211.

### PHIL 2P32

#### **The philosophy of education: critiques of present educational philosophy**

The assessment of prevailing educational theories and practices by critics such as Freire, Illich and Buber, with a view to enabling students to enrich their own educational experience.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 211.

### PHIL 2P82

#### **Business ethics**

(also offered as MGMT 2P82)

This course seeks an understanding of business practices, institutions and actions in order to evaluate their contribution to the general human good. Topics to be considered may include: false or misleading advertising, product safety, monopolistic price schemes, effects of pollution, discriminatory hiring policies, the role of shareholders, management, government and the public in determining corporate policy and economic justice.

*Lectures, seminar, 3 hours per week.*

### PHIL 2P90

#### **Phenomenological psychology**

The bearing of phenomenological-existential philosophy (Husserl, Heidegger, Sartre, Merleau-Ponty) on the basic issues and concepts in psychology. The course deals with the

phenomenological orientation within modern philosophical psychology including William James, Sartre and current cognitive psychology; extensions of current cognitive psychology; extensions of the Phenomenological-Existential methods to psychiatry (Binswanger); Eastern meditational traditions (Yoga, Mahayana Buddhism, etc.) relevant to phenomenological psychology.

*Seminars, 3 hours per week.*

Prerequisite: university credit in PHIL or a discipline appropriately related to the course content or permission of the instructor.

### PHIL 2P91

#### **Philosophy of art**

An historical approach to the philosophy of art centred on the concepts of matter and form. Philosophers dealt with range from Plato to Heidegger.

*Seminars, 3 hours per week.*

### PHIL 2P94

#### **Theory of knowledge**

Some fundamental distinctions in the theory of knowledge, e.g., knowledge and belief; the empirical and the *a priori*; analytic/synthetic; scientific versus metaphysical knowledge.

*Seminars, 3 hours per week.*

Prerequisite: university credit in PHIL or a discipline appropriately related to the course content or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 309hc.

### PHIL 2P95

#### **Metaphysics**

The major problems of metaphysics, considering the question of what there is and covering topics such as the nature of space and time, the mind-body relation, substance and property, universals and particulars, causation, identity and personal identity.

*Lectures, seminar, 3 hours per week.*

Prerequisite: university credit in PHIL or a discipline appropriately related to the course content or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 310hc.

### PHIL 2P97

#### **The philosophy of religion**

Traditional issues such as the proofs for the existence of God, the problem of evil, the relationship of faith to reason and the nature of religious knowledge will be discussed.

*Seminars, 3 hours per week.*

Prerequisite: university credit in PHIL or a discipline appropriately related to the course content or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 306 or 333hc.

### PHIL 2P98

#### **Philosophy in literature**

Plays and novels often represent a concrete resolution of some philosophical dilemma, such as the nature of human freedom versus externally determining forces; the conflict of values, the encounter of opposing world-views. The concrete setting and resolution is frequently more illuminating and persuasive than more abstract approaches in traditional philosophical language.

*Lectures, seminar, 3 hours per week.*

Prerequisite: university credit in PHIL or a discipline appropriately related to the course content or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 317 or 344hc.

### PHIL 2P99

#### **Philosophy of sex**

(also offered as WISE 2P99)

The application of ethics to questions of human sexuality. Topics for analysis include: sexual values, the semantics of sex, the concepts of the romantic and eternal-feminine respect for the personhood of women, censorship, pornography, legal enforcement of morality, sex in advertising, prostitution and AIDS.

*Seminars, 3 hours per week.*

Prerequisite: university credit in PHIL or HLST (EXST) 2F50 or permission of the instructor.

### PHIL 2V85-2V89

#### **Contemporary social issues**

A critical and intensive examination of several problems arising in the areas of social ethics and public policy. Topics may include: the morality of deceit, over-

population, obligations to future generations and the environment, nuclear deterrence, animal liberation, moral enforcement and world hunger. Whenever possible, topics will be selected in accordance with student interests.

*Lectures, seminar, 3 hours per week.*

Prerequisite: university credit in PHIL or permission of the instructor.

#### 1993-94: (2V89) Pluralism vs world order

Topics include development of global consciousness, the tragic dimensions of Africa, the rise of nationalism and balkanization, the need for new institutions and infrastructures.

PHIL 2V92-2V95

#### Selected topics in Analytic philosophy

This course helps the student to identify and apply to current controversial issues, basic distinctions and forms of argument typical of contemporary analytic philosophy. Topics to be considered may include: personal identity, the differences between men and animals, mental imagery, the mind-brain connection, universals and particulars and the meaning of life.

*Lectures, seminar, 3 hours per week.*

Prerequisite: university credit in PHIL or permission of the instructor.

PHIL 2V96-2V99

#### The philosophy of science

An historical introduction to the metaphysical foundations of modern physical science. The concepts of space, time and matter as they evolved from the theories of the Pre-Socratics to those of Bohr, Heisenberg and contemporary exponents of quantum mechanics.

Prerequisite: university credit in PHIL or a discipline appropriately related to the course content or permission of the instructor.

*Seminars, 3 hours per week.*

Credit will not be granted to students who have prior credit in PHIL 325hc.

#### 1993-94: (2V96) Philosophy of technology

The contemporary philosophical expositions of the existential impact of technology will be studied with special reference to the works of Ortega, Heidegger, Jaspers and Habermas.

PHIL 3M90-3M91

#### Critical study of a Classical philosophy

A year-long study of Plato's thought one year, of Aristotle's the next year, investigating the unity of multiplicity in the thinking of each of the two great Greek philosophers. The emphasis is on joint seminar investigation and independent research. The approach is historical, trying to understand Plato or Aristotle in their historical context from the inside rather than by imposing modern categories. May be taken a second time with the alternative subject.

*Lectures, seminar, 3 hours per week.*

Prerequisite: PHIL 2F01 or permission of the instructor.

#### 1993-94: (3M90) Aristotle

PHIL 3P19

#### The rise of Christian philosophy

Philosophy from the patristic period through Erigena and Anselm up to and including the 12th century Renaissance.

*Lectures, 3 hours per week.*

Prerequisite: PHIL 2F01 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 297.

PHIL 3P20

#### Scholastic philosophy

The great Islamic, Jewish and Christian philosophers of the 13th century.

*Lectures, 3 hours per week.*

Prerequisite: PHIL 2F01 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 297.

PHIL 3P56

#### Kant and the 18th century

An historical study of the thought of Immanuel Kant in the context of the 18th century enlightenment, focussing primarily on Kant's *Critique of Pure Reason*.

*Lectures, seminar, 3 hours per week.*

Prerequisite: PHIL 2F02 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 293.

PHIL 3P58

#### Hegel and the 19th century

The 19th century developed not only the great comprehensive metaphysical sys-

tems of German idealism, but also various reactions to them. In addition to Hegel, thinkers studied may include: Fichte, Schelling, Schleiermacher, Schopenhauer, Feuerbach, Marx, Comte, Mill, Kierkegaard, Nietzsche.

*Lectures, seminar, 3 hours per week.*

Prerequisites: PHIL 2F02, 3P56 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHIL 258hc or 293.

PHIL 3P92

#### Hermeneutics

The philosophical theory of interpretation and understanding, with special reference to the methods employed in the humanities (history, literary criticism, etc.). The problems of hermeneutics will be studied in the works of such thinkers as Gadamer, Ricoeur, Heidegger and Habermas.

*Seminars, 3 hours per week.*

Prerequisite: permission of the instructor.

PHIL 3Q90

#### The nature of consciousness

(also offered as PSYC 3Q90)

A review of competing understandings of human consciousness ranging from phenomenology to neural and computational models. Special attention will be given to research and theory on imagery and metaphor. A central historical component will trace the development of approaches to consciousness as a dynamic synthesis of the senses (*sensus communis*, sixth sense) from Aristotle, through the romantic tradition of philosophy and aesthetics, the "unconscious" of Freud, Jung, Hillman and Gendlin and into current research on synesthesias and related states of consciousness.

*Lecture, seminar, 3 hours per week.*

Restriction: Open only to PHIL (single or combined) and PSYC (single or combined) majors until date specified in BIRT guide. Students must hold a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 1F90.

## Philosophy

### PHIL 3Q95

#### Theories of personality: Freud and Jung

(also offered as PSYC 3Q95)

Major clinically derived theories of personality with special attention to their bases in case study/life history methodology. The focus will be on Freud and Jung and their continuing relevance for current personality, development and transpersonal psychology. The possibly unique relation of "depth psychology" to numinous experience (mysticism, creativity, psychosis) will be studied through selected life histories.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PHIL (single or combined) and PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students with prior credit in PSYC 3P85.

### PHIL 3Q96

#### Theories of personality: psychologies of the self

(also offered as PSYC 3Q96)

Major developments in the psychoanalytic tradition (Kohut, Winnicott, Klein) as they relate to analogous developments within transpersonal and Jungian approaches to "higher" states of consciousness. The conflicts and congruences between these perspectives will be illustrated by selected life histories (e.g., Melanie Klein, Wilhelm Reich, G. Gurdjieff).

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PHIL (single or combined) and PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students with prior credit in PSYC 3P86.

### PHIL 3V95-3V99

#### Issues in 17th and 18th century philosophy

A special issue or a particular thinker of central importance in the classical period of modern philosophy. Where the course does not focus upon one individual (e.g., Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, Kant), it will trace the

development of an issue (e.g., causality, mind-body union, the doctrine of substance, personal identity, etc.) through its classical origins.

*Seminars, 3 hours per week.*

Prerequisite: PHIL 2F02 or permission of the instructor.

### 1993-94: (3V97) Hume

### 1993-94: (3V98) Continental Rationalism

*Note:*

*Although all year 4 level courses are intended for fourth-year philosophy honors majors, students at the third-year level may take the equivalent of one fourth-year credit if they have obtained second-class honors standing or with the permission of the department. No undergraduate student may take more than one credit in the form of honors tutorials.*

### PHIL 4F70

#### Introduction to cognitive science

(Also offered as COSC 4F70)

An overview of the modern study of the mind from a philosophical, psychological and computational perspective. Computer models of human information processing are examined in three ways: as a source of philosophical puzzles about minds, as psychological theories of human functioning and as a branch of computer science related to artificial intelligence. The interdisciplinary nature of cognitive science is stressed.

*Lectures, 3 hours per week; lab, 1 hour per week.*

Prerequisite: permission of the instructor.

Note: a knowledge of computer programming is not necessary for registration in the course.

Credit will not be granted to students who have prior credit in COSC 3V90 or 4V90 (1987/88).

### PHIL 4F99

#### Honors tutorial

Directed intensive and individual study in an area in which a student has developed and displayed a particular interest; to be chosen in consultation with a faculty member able and willing to supervise that study. Proposals for a tutorial course must be approved by the chair of

the department by the last day for late registration.

Prerequisite: see Note above.

### PHIL 4P07

#### Husserl and transcendental Phenomenology

Basic issues and the characteristic method of phenomenology will be studied, using some of the major works of Husserl.

Credit will not be granted to students who have prior credit in PHIL 506hc.

Restriction: Students must have a major average of 70 percent and have a minimum of 10.0 overall credits.

*Seminars, 3 hours per week.*

Prerequisite: see Note above.

### PHIL 4P08

#### Advanced studies in 19th century Existential philosophy

An advanced seminar course in the continental European philosophy of the 19th century, e.g., Kierkegaard, Nietzsche.

*Seminars, 3 hours per week.*

Restriction: Students must have a major average of 70 percent and have a minimum of 10.0 overall credits.

Prerequisite: see Note above.

Credit will not be granted to students who have prior credit in PHIL 400.

### PHIL 4P97

#### Honors tutorial

Directed intensive and individual study in an area in which a student has developed and displayed a particular interest; to be chosen in consultation with a faculty member able and willing to supervise that study. Proposals for a tutorial course must be approved by the chair of the department by the last day for late registration.

Restriction: Students must have a major average of 70 percent and have a minimum of 10.0 overall credits.

Prerequisite: see Note above.

### PHIL 4P98

#### Honors tutorial

Directed intensive and individual study in an area in which a student has developed and displayed a particular interest; to be chosen in consultation with a faculty member able and willing to supervise that study. Proposals for a tutorial course must be approved by the chair of

the department by the last day for late registration.

Restriction: Students must have a major average of 70 percent and have a minimum of 10.0 overall credits.

Prerequisite: see Note above.

PHIL 4V00-4V04

**Advanced studies in political philosophy**

A critical examination of either a particular thinker or problem in political philosophy. Political philosophers may include: Plato, Aristotle, Hobbes, Locke, Rousseau, Kant, J. S. Mill, Rawls and Nozick. Problems may include: liberty and political obligation, justice and equality, human nature and the political order, civil disobedience, participation and consent, liberalism, anarchism, socialism and conservatism.

*Seminars, 3 hours per week.*

Restriction: Students must have a major average of 70 percent and have a minimum of 10.0 overall credits.

**1993-94: (4V01) Gandhi**

PHIL 4V06-4V14

**Studies in contemporary European philosophy**

A study of the work of one or more thinkers prominent in recent Continental thought.

*Seminars, 3 hours per week.*

Restriction: Students must have a major average of 70 percent and have a minimum of 10.0 overall credits.

**1993-94: (4V12) Contemporary French philosophy**

PHIL 4V15-4V29

**Modern philosophical studies**

An advanced course devoted to one or more of the major thinkers of the tradition from Descartes to the present day.

*Seminars, 3 hours per week.*

Restriction: Students must have a major average of 70 percent and have a minimum of 10.0 overall credits.

Prerequisite: see Note above.

PHIL 4V30-4V39

**Advanced studies in Eastern philosophy**

Concentrated critical and interpretative study of selected texts in the areas of:

Advaita, Vedanta, Yoga, etc. or Madhyamika and Yogacara schools of Buddhism.

Restriction: Students must have a major average of 70 percent and have a minimum of 10.0 overall credits.

**1993-94: (4V33) Japanese philosophy (4V34) Vedanta**

SANS 1F00

**Sanskrit**

An introduction to classical Sanskrit, to its grammar and style and to basic techniques of translating, with special emphasis on religious and philosophical literature.

*Lectures, 3 hours per week.*

# Physical Education

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## Officers of instruction

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### Chair

Lorne J. Adams

### Professor

V. Jean Wilson

Robert Kerr

### Associate professors

Lorne J. Adams

Paulette Coté-Laurence

Robert M. Davis

### Assistant professors

Maureen Connolly

William Montelpare

Nancy Murray

Daniel Rosenberg

### Lecturers

Anna Course

Valerie Drake

Timothy Sawicki

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## General information

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### *Physical Education and Recreation centre 213*

Physical Education students may choose either a four-year honors program or a three-year pass program, both leading to the degree of Bachelor of Physical Education (BPhEd). The program is unique in that it emphasizes a movement approach to physical education based on the principles of Rudolf Laban. Students may select additional elective credits in the areas of adapted movement studies, coaching, child movement studies, health, recreation and the psychology or sociology of sport.

As a condition of graduation with a Bachelor of Physical Education degree, students must complete a personal water safety requirement as set out by the Faculty of Physical Education and Recreation; i.e., PHED 0N01, swimming lab.

## Honors program

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### Year 1

PHED 1P91, 1P92, 1P93, 1P94; one science and one humanities context credit; one elective credit. (See Notes 1. and 2.).

In order to qualify as Physical Education majors, students must successfully complete the activity labs: PHED 0N02--Folk dance; PHED 0N03--Educational gymnastics; PHED 0N04--Team games; PHED 0N05--Individual activities.

### Note:

1. Enrolment in year 1 and 2 will be limited. In order to proceed to year 2, students must complete an Application to Major. Admission to year 2 will be based upon grades obtained in year 1 and completion of activity labs. In order to be eligible to major in Physical Education, students must achieve a minimum grade of 65 percent in each of PHED 1P91, 1P92, 1P93 and 1P94. Should more than 100 students qualify, in the first instance, students will be admitted on the basis of the average of their marks in PHED 1P91, 1P92, 1P93 and 1P94. In the event of a tie, admission will then be based upon the average of the three remaining credits.

2. Students who achieve a grade of 75 percent in each of PHED 1P91, 1P92 and 1P93, 1P94 on their first attempt and who have completed an Application to Major will be guaranteed a position in year 2 after completion of activity labs.

### Year 2

PHED 2P00, 2P02, 2P03, 2P04, 2P05, 2P07; one social science context credit; one elective credit (see Note 1. above).

### Year 3

PHED 3P00, 3P03, 3P04, 3P17, 3P41; two and one-half elective credits.

### Year 4

PHED 4F90 or 4F91 or 4F93; 2 credits in PHED numbered 3(*alpha*)90 or above; two elective credits.

### Note:

Students intending to pursue teacher certification upon completion of their degree should consult the calendar entry for the Faculty of Education for the program admission requirements.

Physical Education majors are encouraged to take a portion of their elective courses outside the Department of Physical Education.

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## Pass program

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Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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## Non-Physical Education majors

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Subject to enrolment limitations, students in other disciplines who wish to enrol in credit courses in Physical Education may select from the following approved courses only:

PHED 1P91, 1P92, 1P93, 1P94, 2P00, 2P01, 2P02, 2P03, 2P04, 2P05, 2P07, 2P19, 2P41, 2P44, 2P70, 2P94, 2P96, 2P97, 3P00, 3P03, 3P04, 3P07, 3P17, 3P41, 3P90, 3P92, 3P94, 3P95. Please note that entry into a number of these courses requires permission of the department due to enrolment restrictions.

Students must note that there is a limit of five credits in Physical Education, Recreation and Leisure Studies, Business and Education which can be included for credit in a pass BA or BSc program.

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## Other programs

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In addition to the academic program, the Faculty of Physical Education and Recreation provides four distinct non-academic programs: intramural, recreational, sport skills and intercollegiate athletics. For details, see Facilities and Services.

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**Prerequisite and restrictions**


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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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**Description of courses**


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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

*Note:* Physical Education majors must successfully complete the activity labs outlined below. Students will register for labs at registration.

**Physical Education activity labs**
**PHED 0N01**
**Swimming**

A six-week activity lab concentrating on personal water safety including stroke instruction, water safety, beginning lifesaving and boating skills.  
*2 hours per week.*

*Note:* Students must successfully complete this activity lab as a condition of graduation.

**PHED 0N02**
**Folk dance**

A six-week activity lab that introduces students to a variety of folk dance with some application to the principles of movement of Rudolf Laban.  
*2 hours per week.*

**PHED 0N03**
**Educational gymnastics**

A six-week activity lab introducing students to functional movement based on the principles of Rudolf Laban.  
*2 hours per week.*

**PHED 0N04**
**Team games**

A six-week activity lab that will provide students with fundamental skills associ-

ated with selected team games.  
*2 hours per week.*

**PHED 0N05**
**Individual activities**

A six-week activity lab that will provide students with fundamental skills associated with individual and lifetime activities.  
*2 hours per week.*

*Note:* Successful completion of PHED 0N02-0N05 is a prerequisite for admission to year 2 as a physical education major.

**PHED 1P91**
**Introduction to sport and physical education**

A survey course examining the origins and historical significance of physical activity in Western civilization from ancient times to the present. Emphasis on evolutionary developments in Canada, Europe and the United States.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Credit will not be granted to students who have prior credit in PHED 190.

**PHED 1P92**
**Introduction to exercise**

An introductory course providing an understanding of how the body responds to and recovers from physical activity; the adaptations of the body to a variety of training programs.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Credit will not be granted to students who have prior credit in PHED 190.

**PHED 1P93**
**Introduction to movement education**

An historical and philosophical perspective with particular attention directed to the influence of Rudolf Laban and the application of movement concepts and theories to the field of physical education. Historical developments in Canada, the United Kingdom and the United States are examined.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single)

majors until date specified in BIRT guide.

**PHED 1P94**
**Introduction to motor development**

The patterns of changes in motor abilities and skills involved in motor development throughout the life span. Physical growth, reflexive development and age-related changes in motor behavior are surveyed, as well as factors affecting them.

*Lectures, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

**PHED 2P00**
**Movement orientation through developmental games**

The educational and developmental value of games. The fundamental principles of movement as developed by Rudolf Laban applied through games and fundamental skills for children.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94, including PHED labs 0N04 and 0N05 or permission of the instructor.

*Note:* Enrolment limited to 100 students (see Note 1.).

**PHED 2P01**
**Organization and administration of physical education and sport**

Theory and practice of administration and management related to various delivery systems in both private and public sectors. Organizations structures at the federal, provincial and local levels.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94 or permission of the instructor.

**PHED 2P02**
**Psycho-social growth and development**

Sociological and psychological implications of sport and physical education will be discussed as they relate to motor performance. This includes such aspects as personality, motivation, achievement needs, feedback, group conflict, group



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cohesion and leadership roles of the individual.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PHED (single) majors.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94 or permission of the instructor.

Note: Enrolment limited to 100 students (see Note 1.).

### PHED 2P03

#### **Movement orientation through educational gymnastics**

Application of Laban's principles in the educational gymnastics environment. The content of educational gymnastics will be used to analyse movement and to develop motor performance. Practical application of theory will be pursued through lab situations.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94, including PHED 0N03 or permission of the instructor.

Note: Enrolment limited to 100 students (see Note 1.).

### PHED 2P04

#### **Musculo-skeletal anatomy**

The anatomical bases of movement--skeletal and muscular--are used to develop an understanding of human movement. The anatomy of the skeletal structure, joint actions and the interrelationship of aggregate muscle groups. Articular and muscular injuries. Biomechanics and the growth and development of anatomical systems.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94 or permission of the instructor.

Note: Enrolment limited to 100 students (see Note 1.).

### PHED 2P05

#### **Motor learning and motor behavior**

A theoretical examination of the acquisition of motor skills, including: the neurophysiological structures involved in learning, learning theories and their application, information processing and factors involved in the acquisition of motor skills.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94 or permission of the instructor.

Note: Enrolment limited to 100 students (see Note 1.).

### PHED 2P07

#### **Movement orientation through creative dance**

Application of Laban's principles of movement as they give variety and clarity of expression to creative dance. Emphasis will be placed upon the development of movement sequences utilizing various stimuli and the basic components of dance composition.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94, including PHED 0N02 or permission of the instructor.

Note: Enrolment limited to 100 students (see Note 1.).

### PHED 2P19

#### **The philosophy and principles of coaching**

The principles of coaching as they relate to the physiological and psychological development of the athlete. The role of the coach and the organization of sport in contemporary society.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisites: PHED 2P02, 2P05 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHED 3P91.

### PHED 2P41

#### **Science and health behavior**

Problems associated with individuals and their ability to function effectively and efficiently in present-day society. The student will examine the decision-making process as it relates to the delivery of health education information.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHED 340 or 3P42.

### PHED 2P44

#### **Activity programming for the senior adult**

The habilitation and rehabilitation of the senior adult in terms of physical activity; activity programming using a growth model. Specific topics in terms of motivation, needs, abilities and disabilities of senior adults will be addressed as well as therapeutic movement in relation to exercise, dance, adaptations of individualized competitive and co-operative games or sport activity. A practicum situation dealing with senior adults in community or institutionalized settings.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHED 3P44.

### PHED 2P70

#### **Care and prevention of injuries**

The basic treatment, recognition and prevention of musculo-skeletal injuries; the interrelationship of anatomy, physiology and kinesiology and the practical application of knowledge of these fields including emergency care and preventative taping.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94, 2P04 or permission of the instructor.

Credit will not be granted to students who have prior credit in 2P91.

### PHED 2P94

#### **Movement for the young child** (also offered as CHST 2P94)

Movement education experiences applicable to the child aged 3 to 5. Practical experience in various play situations through creative games, dance and activities with apparatus will comprise a major part of the course; it integrates various art forms with movement activities. Bases of movement for preschool children, motor development and suit-

able environments for learning will be discussed.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single), BA/BE and CHST (single or combined) majors until date specified in BIRT guide.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94 and PSYC 1F90 or permission of the instructor.

Note: Enrolment limited to 40 students per section.

#### PHED 2P96

##### **Measurement and evaluation**

The measurement and evaluation process as it relates to human movement including basic descriptive statistics, an introduction to statistical inference, the principles of test construction, the criteria for evaluating tests, test administration and the interpretation of results.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHED 3P96.

#### PHED 2P97

##### **Physiology of exercise I**

An examination of cardiovascular, muscular physiology and bioenergetics (anaerobic metabolism) through factors such as age, sex and lifestyle.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisites: PHED 1P91, 1P92, 1P93, 1P94 or permission of the instructor.

#### PHED 3P00

##### **Movement orientation through advanced games**

A continuation of the study of games. Emphasis upon analysis, motor skill development and strategies in advanced games. Application will be made of Laban's principles of movement as they apply to advanced games.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors.

Prerequisites: PHED 2P00, 2P03, 2P07 or permission of the instructor.

#### PHED 3P03

##### **Movement orientation through advanced educational gymnastics**

Designed to facilitate skill development and understanding in the area of educational gymnastics through advanced practical experience and theoretical application of Laban's movement principles.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors.

Prerequisites: PHED 2P00, 2P03, 2P07 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHED 3P93.

#### PHED 3P04

##### **Physical education for the exceptional individual**

Emphasis on the life conditions and needs of exceptional people who require special physical education programs or adapted activities. Visits to schools and institutions, as well as practical work with children and/or adults, are included.

*Lectures, lab, fieldwork, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisites: PHED 2P00, 2P02, 2P03, 2P04, 2P05, 2P07 or permission of the instructor.

#### PHED 3P07

##### **Movement orientation through folk dance**

Students are provided with an understanding of Laban's principles of movement as they relate to folk dance. Emphasis is placed on performance, teaching, evaluation and analysis of a wide variety of folk dance forms.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisite: PHED 2P00 or 2P03 or 2P07 or permission of the instructor.

#### PHED 3P17

##### **Movement orientation through advanced creative dance**

Advanced sequential skill and knowl-

edge development in the area of creative dance. Advanced movement themes explored in the study of dance as an art form.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors.

Prerequisites: PHED 2P00, 2P03, 2P07 or permission of the instructor.

#### PHED 3P22

##### **Movement orientation to physical education**

The development and implementation of movement programs for children. Curricular application of Laban's movement principles will be emphasized in order to give the student an understanding of these principles in a teaching setting.

*Lectures, lab, fieldwork, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisites: PHED 2P00, 2P03, 2P07 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHED 302.

#### PHED 3P41

##### **Health behavior**

Selected contemporary problems in health education with a focus on problems that concern individuals in our society. Topics discussed will range from environmental health and drug education to selected aspects of human sexuality.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors.

Prerequisites: PHED 1P91 and 1P92 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHED 340.

#### PHED 3P80

##### **Clinical and field practices in athletic therapy**

(also offered as HLST 3P80)

Clinical and field skills used in athletic therapy. Emphasis is placed on musculoskeletal assessment of the upper appendage, patient management skills, advanced emergency care, therapeutic modalities, rehabilitation techniques and taping. A clinical internship in the athletic injury clinic is required.

*Lectures, 2 hours per week, internship, 3*

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*hours per week.*

Restriction: Open only to PHED (single) majors. Students should consult the instructor regarding permission to register. Prerequisites: PHED 2P04 and 2P70 or 2P91 with a minimum grade of B and permission of the instructor.

### PHED 3P81

#### **Clinical assessments in athletic therapy**

(also offered as HLST 3P81)

Functional and surface anatomy of the major joints; the clinical skills used in the assessment of musculo-skeletal injuries related to the lower appendage and lower back. Qualitative posture and gait assessment. Clinical internship required. *Lectures, 2 hours per week, internship, 3 hours per week.*

Restriction: Open only to PHED (single) majors. Students should consult the instructor regarding permission to register. Prerequisite: PHED 3P80 and permission of the instructor.

### PHED 3P90

#### **Physiology of exercise II**

An examination of respiration bioenergetics (aerobic metabolism) and exercise prescription. Application of laboratory and field tests.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisite: PHED 2P97 or permission of the instructor.

Credit will not be granted to students who have prior credit in PHED 290hc.

### PHED 3P92

#### **Assessment and activity for special populations**

Assessment techniques and programming for mentally and physically handicapped persons. Practical work with special populations is included.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisite: PHED 3P04 or permission of the instructor.

### PHED 3P93

#### **Philosophy of physical education, sport and dance**

An introduction to the philosophy of physical education, sport and dance perceived in terms of human movement. The nature of such philosophic discipline and the significance of its professional application to physical education, sport and dance are examined.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PHED (single) majors with approval to year 4 and who have a minimum of 15.0 overall credits.

### PHED 3P94

#### **Psychomotor learning and motor control**

The human performance model is examined focussing on information processing as it relates to attention and human performance. The perceptual mechanism, decision-making mechanism, the effector mechanism and associated factors are studied as they apply to skill acquisition. Contemporary theories of motor control are discussed in relation to a variety of physical education settings.

*Lectures, lab/seminar, 3 hours per week.*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisite: PHED 2P05.

Credit will not be granted to students who have prior credit in PHED 3P05.

### PHED 3P95

#### **Psycho-social aspects of sport**

An integration of reading and research from selected areas of the sociology, psychology and physiology of sport. Analysis and discussion of research readings, theories, issues and trends as they relate to the performance of a superior athlete.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors. Students should consult the Faculty regarding permission to register.

Prerequisite: PHED 2P02. Consult instructor regarding permission to register. Note: Enrolment limited to 25 students.

### PHED 3P97

#### **Observation and analysis of movement**

Studies and readings in selected areas of movement observation. Observational techniques, analysis of movement pat-

terns, factors influencing movement behavior and the recording of movement patterns.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PHED (single) majors. Students should consult the Faculty regarding permission to register.

Prerequisites: PHED 3P00, 3P03, 3P17 and permission of the instructor.

Note: Enrolment limited to 7 - 10 students, chosen after an interview with the instructor.

### PHED 3P98

#### **Special studies in physical education I**

Lectures, seminars and practical experiences offered in specialized areas of physical education.

Restriction: Open only to PHED (single) majors who have a minimum of 10.0 overall credits.

### PHED 3P99

#### **Special studies in physical education II**

Directed study in specialized areas of physical education. Approval of a faculty member and the chair.

Restriction: Open only to PHED (single) majors. Students should consult the Faculty regarding permission to register.

### PHED 3V25-3V30

#### **Special studies in folk dance**

The historical, geographical and cultural influences upon folk dance in selected countries. Practice in learning the dances of the countries, as well as introductions to the folklore and activities of various ethnic groups.

*Lecture, 1 hour per week; lab, 2 hours per week. (Two 3-hour meetings per week for 5 weeks).*

Restriction: Open only to PHED (single) majors until date specified in BIRT guide.

Prerequisites: PHED 0N02, 3P07.

### 1993-94: (3V25) Dance of the Balkans

### PHED 4F90

#### **Research methods in physical education**

Qualitative and quantitative methods of research appropriate for use in physical education. Critical analysis of research in a variety of areas of physical education

emphasized.

*Tutorials, seminar, 4 hours per week.*

Restriction: Open only to PHED (single) majors with a major average of 70 percent and approval to year 4 and a minimum of 15.0 overall credits.

#### PHED 4F91

##### **Honors tutorial**

Directed study in one of the following areas: movement education, health, motor learning, physiology, philosophy, history, dance, exceptional individuals, psychology and sociology of sport. Areas of interest are to be chosen in consultation with faculty willing to supervise that study. Written proposals must be approved prior to registration.

*Tutorials, seminar, 4 hours per week.*

Restriction: Open only to PHED (single) majors with a major average of 70 percent, approval to year 4 and a minimum of 15.0 overall credits.

#### PHED 4F93

##### **Advanced movement seminar**

Designed to aid students in increasing their personal expertise and knowledge in movement education. Emphasis on improvement, refinement and perfection of personal, observational and analytical skills in a wide variety of movement and experiences.

*Tutorials, seminar, 4 hours per week.*

Restriction: Open only to PHED (single) majors with a major average of 70 percent, approval to year 4 and a minimum of 15.0 overall credits.

Credit will not be granted to students who have prior credit in PHED 403.

#### PHED 4P11

##### **Sport ethics**

Examination of specific ethical issues in sport by employing a speculative philosophical method. Topics may include: the ethics of competition, sportsmanship, cheating and violence in sport, the use of performance-enhancing drugs, equality and excellence, sex equity in sports and the role of intercollegiate sports.

*Lectures/seminars, 3 hours per week.*

Restriction: Open only to PHED (single) majors who have a minimum of 10.0 overall credits.

#### PHED 4P95

##### **Women and sport**

(also offered as WISE 4P95)

Historical and current issues relating to women's participation in sport. The influence on performance of physiological, psychological and sociological factors.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PHED (single) and WISE (combined) majors with approval to year 4.

Prerequisite: PHED 3P95 or SOCI 2P51 or WISE 2F91. Consult instructor regarding permission to register.

# Physics

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## Officers of instruction

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### Chair

Fereidoon S. Razavi

### Professors

John E. Black  
Frans P. Koffyberg  
Fereidoon S. Razavi  
Ramesh C. Shukla

### Associate professors

Shyamal K. Bose  
Bozidar Mitrovic

### Assistant professor

Edward Sternin

### Senior laboratory instructor

Frank A. Benko

### Laboratory demonstrator

Ronald Snelgrove

### Professor emeritus

Colin A. Flint

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## General information

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### Mackenzie Chown, B210

The department offers a four-year honors and a three-year pass program leading to a BSc. Students may take a single major in Physics or a combined major with Biological Sciences, Chemistry, Computer Science, Earth Sciences or Mathematics. The core of the program is designed to provide a student with an understanding of the principles and fundamental interactions of classical and quantum physics. It is possible for students who do not major in Physics to take advanced courses, provided they have the physics and mathematics required of year 1 pass physics students. An experimental path of PHYS 2P31 and 3P92 or a modern physics path of PHYS 2P50 and 3P50 are possible.

Students are urged to give careful consideration to their choice of program, keeping in mind their areas of interest and capabilities as well as their long-term career goals.

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## Honors program

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### Year 1

PHYS 1F20 or 1F25 or 1F90 (preferred); MATH 1P93 and either 1P94 or 1P95; COSC 1P93 and MATH 1P12; CHEM 1P80, 1P81 or CHEM 1P90, 1P91 (preferred); one humanities or social science context credit.

### Year 2

PHYS 2P20, 2P21, 2P30, 2P31, 2P41, 2P50; MATH 2F95; one humanities or social science context credit (whichever was not taken in year 1).

### Year 3

PHYS 3P20, 3P30, 3P41, 3P50, 3P70, 3P91, 3P95; one-half credit from PHYS 3P92, 3P96; one elective credit.

### Year 4

PHYS 4F50, 4F90, 4P41, 4P70; one credit chosen from PHYS 4F91, 4P30, 4P61, 4P71; one elective credit.

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## Pass program

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### Year 1

PHYS 1F20 or 1F25 or 1F90 (preferred); MATH 1P93 and either 1P94 or 1P95; COSC 1P93 and MATH 1P12; CHEM 1P80, 1P81 or CHEM 1P90, 1P91 (preferred); one humanities or social science context credit.

### Year 2

PHYS 2P20, 2P21, 2P30, 2P31, 2P41, 2P50; MATH 2F95; one humanities or social science context credit (whichever was not taken in year 1).

### Year 3

PHYS 3P30, 3P41, 3P50, 3P70, 3P91, 3P95; two elective credits.

## Concurrent BSc/BEd

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The Faculty of Mathematics and Science and the Faculty of Education co-operate in offering a concurrent pass BSc/BEd program for students interested in teaching math or science at the Junior/Intermediate level; grade 4-10. Please refer to the Education-Concurrent BSc/BEd Program listing for additional information.

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## Combined major programs

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Typical programs are:

### Physics and Biological Sciences

#### Honors program

##### Year 1

PHYS 1F20 or 1F25 or 1F90 (preferred); BIOL 1F90; MATH 1P93, 1P94; one humanities and one social science context credit.

##### Year 2

PHYS 2P20, 2P50; BIOL 2F01; one credit from BIOL 2P04, 2P05, 2P90, 2P91, 2P93, 2P98; CHEM 1P80, 1P81 or CHEM 1P90, 1P91 (preferred); MATH 2F95.

##### Year 3

One-half credit from PHYS 3P20, 3P50, 3P70; PHYS 2P21, 2P30, 2P41; one BIOL credit; one year 2 or 3 credit in BIOL or one year 3 PHYS credit; one elective credit.

##### Year 4

PHYS 4F90, 4F91 or BIOL 4F90, 4F91 or PHYS 4F90 and one elective credit or BIOL 4F92 and one elective credit; one year 3 or 4 credit in PHYS; one year 3 or 4 credit in BIOL; one year 3 or 4 credit in PHYS or BIOL.

#### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Physics and Computer Science****Honors program***Year 1*

PHYS 1F20 or 1F25 or 1F90 (preferred); COSC 1P01, 1P04; MATH 1P66, 1P67, 1P93, 1P94; one social science context credit.

*Year 2*

PHYS 2P20, 2P21; one credit from PHYS 2P30, 2P31, 2P41, 2P50; (note: 2P30, 2P41 and 2P50 are prerequisites for year 3 courses); COSC 2F00; MATH 2F95; one humanities context credit (see Note 1.).

*Year 3*

PHYS 3P95; and one and one-half credits from PHYS 3P20, 3P30, 3P41, 3P50, 3P70; COSC 2P03; one-half credit from COSC 2Y01, 2Y04, 2Y05, 2Y06 or 2Y07; one COSC credit numbered 2(*alpha*)90 or above; MATH 1P12; one-half elective credit.

*Year 4*

Two credits from PHYS 4F50, 4F90, 4P41, 4P70; COSC 3F00, 3P02, 3P04; one COSC credit numbered 3(*alpha*)90 or above.

*Note:*

1. ENGL 1F99 strongly recommended; it is a preferred prerequisite for COSC 3F00.

**Physics and Mathematics****Honors program***Year 1*

PHYS 1F20 or 1F25 or 1F90 (preferred); MATH 1P93 and either MATH 1P94 or 1P95; MATH 1P12, 1P90; one humanities and one social science context credit.

*Year 2*

PHYS 2P20, 2P21, 2P30, 2P31, 2P41, 2P50; MATH 2F00 or 2F95; MATH 2F10.

*Year 3*

Two credits from PHYS 3P20, 3P30, 3P41, 3P50, 3P70; MATH 3F00; PHYS 3P95 and 3P96 or MATH 3F94; one elective credit.

*Year 4*

PHYS 4F50; one credit from PHYS 4P41, 4P70, 4P71; PHYS 4F90 and 4F91 or any two year 4 MATH credits; one elective credit.

**Pass program**

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Physics and Chemistry****Physics and Earth Sciences**

Please refer to the departmental listings in Chemistry and Earth Sciences for combined major programs with these subjects.

**Master of Science (MSc) program**

The department offers an MSc program in condensed matter physics. Experimental and theoretical studies are provided. The program must include PHYS 5F90 (MSc thesis) and two credits, of which at least one must be a graduate course.

**Graduate courses**

PHYS 5F90  
MSc thesis

PHYS 5P50  
Advanced quantum mechanics I

PHYS 5P51  
Advanced quantum mechanics II

PHYS 5P70  
Advanced solid state physics

PHYS 5P71  
Defect solid state

PHYS 5P72  
Many body theory

PHYS 5P73  
Light scattering in condensed matter

## PHYS 5P74

Anharmonicity in crystals

*For details, see the Graduate Calendar or contact the chair of the department.*

**Prerequisite and restrictions**

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

**Description of courses**

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

## ASTR 1F00

**Introduction to astronomy**

An introductory course in astronomy, designed for both non-science and science students. Topics include: a description of the appearance of the night sky, the properties of the sun and stars and a discussion of the planets of the solar system, galaxies, history of astronomy and the properties of some unusual astronomical objects such as pulsars and black holes.

*Lectures, 3 hours per week.*

Note: Field trips and seminars: a trip to the McLaughlin Planetarium, a night of observing the stars and some seminars.

## PHYS 1F20

**Introduction to classical physics**

Fundamental classical physics phenomena and concepts; mechanics, optics, electromagnetism and thermal physics. This material should be of interest and use to students who plan to major in the physical or life sciences.

*Lectures, 3 hours per week; problem sessions, 2 hours per week.*

Note: A background in elementary algebra and trigonometry is useful.

## Physics

### PHYS 1F25

#### Introduction to physics

Combines the lectures in PHYS 1F20 with the laboratory in PHYS 1F90. The course is for science students, including those in Pre-professional Studies for the Health Sciences, who require an introductory physics course with laboratory, but who do not have OAC physics.

*Lectures, 3 hours per week; tutorial and lab, 3 1/2 hours per week.*

Credit will not be granted to students who have prior credit in PHYS 1F20.

### PHYS 1F90

#### Principles of physics

A basic treatment of mechanics, electromagnetism and optics, followed by an introduction to atomic physics. This course is designed for students intending to major in physics (either as a single major or as part of a combined major), chemistry, mathematics or computer science. Credit in PHYS 1F90 is preferred for entry into all year 2 physics courses.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisite: OAC physics is strongly recommended.

### PHYS 2P20

#### Introductory mechanics

A treatment of the mechanics of particles and systems of particles by the Newtonian method; conservation of linear momentum, angular momentum and energy; elementary dynamics of rigid bodies; oscillators; motion under central forces; selected applications.

*Lectures and problem sessions, 3 hours per week; lab, 3 hours per week.*

Prerequisites: PHYS 1F20 or 1F25 or PHYS 1F90 (preferred); MATH 1P93 and either 1P94 or 1P95.

### PHYS 2P21

#### Optics

Ray optics of mirrors and lenses; simple optical systems; wave theory; interference and diffraction of light waves; interferometry; polarization of light; optical instruments.

*Lectures and problem sessions, 3 hours per week; lab, 3 hours per week.*

Prerequisites: PHYS 1F20 or 1F25 or PHYS 1F90 (preferred); MATH 1P93 and either 1P94 or 1P95.

### PHYS 2P30

#### Electromagnetism I

The theories of electricity and magnetism are developed up to the level of Maxwell's equations.

*Lectures, 3 hours per week; lab demonstration, tutorial, 2 hours per week.*

Prerequisites: PHYS 1F20 or 1F25 or PHYS 1F90 (preferred); MATH 1P93 and either 1P94 or 1P95.

### PHYS 2P31

#### Electronics

Basic studies in conduction in metals and semiconductors; circuit analysis; semiconductor junction, diode and transistor; rectification, switching and amplification; digital and linear integrated circuits; electrical measurement instruments. No previous course in electricity/magnetism/electronics is required. High school algebra and some basic calculus will be used in the quantitative sections.

*Lectures, 3 hours per week; lab, 3 hours per week.*

Prerequisites: PHYS 1F20 or 1F25 or 1F90 and a MATH credit or permission of the instructor.

Note: Laboratory will include student exercises and instructor demonstration. Credit will not be granted to students who have prior credit in PHYS 232hc.

### PHYS 2P41

#### Thermodynamics

Development of classical thermodynamics, fundamental laws and equations, Maxwell relations, application to the thermodynamic properties of solids and of magnetic systems, phase equilibria.

*Lectures, 3 hours per week, tutorial, 2 hours every other week.*

Prerequisites: PHYS 1F20 or 1F25 or PHYS 1F90 (preferred); MATH 1P93 and either 1P94 or 1P95.

### PHYS 2P50

#### Modern physics I

Special relativity, photons, the wave-particle aspects of electromagnetic radiation and matter; introduction to wave mechanics; the hydrogen atom and atomic line spectra; orbital and spin angular momenta; lasers.

*Lectures, 3 hours per week, tutorial, 1 hour per week.*

Prerequisites: PHYS 1F90 (preferred) or PHYS 1F20 or PHYS 1F25; MATH

1P93 and either 1P94 or 1P95.

### PHYS 3P20

#### Classical mechanics

An advanced treatment of the mechanics of particles and of rigid bodies; Lagrangian and Hamiltonian methods; Poisson brackets, applications to the theory of small oscillators and central force motions, elements of chaotic motions.

*Lectures, 3 hours per week, tutorial, 2 hours every other week.*

Prerequisites: PHYS 2P20; MATH 2F95.

### PHYS 3P30

#### Electromagnetism II

Electric and magnetic fields in matter in the static case. Laplace's and Poisson's equations. Faraday's Law and Maxwell's displacement current. Maxwell's equations and electromagnetic waves in vacuum and in dielectric media.

*Lectures, 3 hours per week, tutorial, 2 hours every other week.*

Prerequisites: PHYS 2P30; MATH 2F00 or 2F95.

Credit will not be granted to students with prior credit in PHYS 3P31.

### PHYS 3P41

#### Statistical physics I

Introduction to probability distribution functions, accessible states, entropy, temperature, partition functions and relations to thermodynamic functions.

*Lectures, 3 hours per week, tutorial, 2 hours every other week.*

Prerequisite: PHYS 2P41.

### PHYS 3P50

#### Modern physics II

Atoms and their optical and X-ray spectra; spin and magnetic properties; ESR and NMR; energy band structure of solids; semiconductors and lasers; systematics and nuclear properties; nuclear decay and reactions.

*Lectures, 3 hours per week.*

Prerequisite: PHYS 2P50.

### PHYS 3P70

#### Introduction to wave mechanics

Wave particle dualism, Schrodinger equation, solution of simple one-dimensional barrier problems and the harmonic oscillator, hydrogen atom, angular mo-

mentum theory, introduction to perturbation theory and variational methods.

*Lectures, 3 hours per week, tutorial, 2 hours per week.*

Prerequisites: PHYS 2P50; MATH 2F95.

#### PHYS 3P91

##### Experimental physics I

Laboratory experiments to be selected from atomic physics, nuclear physics, solid state physics.

*Labs, 1 day per week.*

Prerequisites: PHYS 2P20, 2P21, 2P30 or permission of the instructor.

#### PHYS 3P92

##### Experimental physics (electronics) II

Operational amplifiers, converters, switches, microcomputers and their application to physical measurements.

*Labs, 1 day per week.*

Prerequisite: PHYS 2P31 or permission of the instructor.

#### PHYS 3P95

##### Methods of mathematical physics I

Vector calculus; matrix mechanics; infinite series; ordinary and partial differential equations.

*Lectures, 3 hours per week, tutorial, 2 hours every other week.*

Prerequisites: PHYS 2P20, 2P21; MATH 2F95.

Credit will not be granted to students who have prior credit in PHYS 3F95.

#### PHYS 3P96

##### Methods of mathematical physics II

Special functions; complex variable theory; calculus of variations; tensor analysis.

*Lectures, 3 hours per week, tutorial, 2 hours every other week.*

Prerequisite: PHYS 3P95.

Credit will not be granted to students who have prior credit in PHYS 3F95.

#### PHYS 4F50

##### Quantum mechanics

Operator formalism, Hilbert space, Dirac's transformation theory, matrix mechanics, creation and annihilation operators, second quantization, variational method, perturbation theory, scattering theory.

*Lectures, 4 hours per week.*

Prerequisites: PHYS 3P20, 3P70, 3P95.

#### PHYS 4F90, 4F91

##### Research project

A small experimental, theoretical or applied physics research project to be carried out under the supervision of a member of the department. Students must consult with the chair regarding their proposed program during the first week of lectures.

Restriction: Open only to PHYS (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average and a non-major average of 60 percent or approval to year 4.

#### PHYS 4P30

##### Electromagnetism III

Electromagnetic wave propagation in vacuum, dielectrics, conductors and ionized gases; reflection, refraction, polarization at the plane boundary between two media; wave guide and transmission line propagation; dipole and quadrupole radiation fields; antenna systems; electromagnetic radiation pressure; transformation of the electromagnetic fields.

*Lectures, problem sessions, 3 hours per week.*

Prerequisites: PHYS 3P31, 3P95.

Credit will not be granted to students who have prior credit in PHYS 4P32.

#### PHYS 4P41

##### Statistical physics II

Fundamental postulates, equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics are derived and applied in appropriate physical situations of non-interacting and interacting particles; fluctuations; elementary treatment of transport theory.

*Lecture and problem sessions, 4 hours per week.*

Prerequisites: PHYS 3P41, 3P70, 3P95.

#### PHYS 4P61

##### Nuclear physics

Intrinsic properties of nuclei, nuclear binding energy; qualitative treatment of shell model; alpha, beta and gamma radioactivities, nuclear fission, characteristics of nuclear reactions.

*Lectures, problem sessions, 3 hours per week.*

Prerequisites: PHYS 3P50, PHYS 3P70.

#### PHYS 4P70

##### Condensed matter physics I

Crystal structures and crystal binding. The vibration of atoms in solids and the thermodynamics of solids. Introduction to transport properties of solids.

*Lectures, 3 hours per week.*

Prerequisite: PHYS 3P70.

#### PHYS 4P71

##### Condensed matter physics II

Energy bands in metals and semiconductors, lattice vibrations, transport properties of solids, magnetism, defects in solids.

*Lectures, 3 hours per week.*

Prerequisite: PHYS 4P70.

#### PHYS 4P80-4P89

##### Special topics

Given in the event that there is a sufficient number of students with the interest in a special topic and a faculty member is available with the expertise required. Some examples of special topics are: relativity and cosmology; surface physics and electronic states in ordered and disordered systems.

*Lectures, problem sessions, 4 hours per week.*

Prerequisites: PHYS 3P95 and others as appropriate.

Credit will not be granted to students who have prior credit in PHYS 4P80.



# Politics

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## Officers of instruction

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### Chair

William Mathie

### Undergraduate program adviser

William A. Matheson

### Professors

Carl Baar

William H.N. Hull

W.D. Kenneth Kernaghan

J. Patrick Sewell

Garth Stevenson

### Associate professors

Nicolas Baxter-Moore

Leah Bradshaw

Charles Burton

Terrance G. Carroll

Gerald E. Dirks

Juris Dreifelds

Daniel Madar

William A. Matheson

William Mathie

David T. Siegel

### Professor emeritus

Victor M. Fic

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## General information

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### Taro Hall 468

Everyone is affected by politics. It is through politics that the future of the world we inhabit is shaped. Aristotle called politics the master science not in order to boast but because he recognized how wide and pervasive politics is. Certainly, the interests of political scientists are diverse. They may study conflict at city hall or in the courtroom; the arguments and processes through which our national existence might be preserved; the collapse of Communism and the struggle to establish new political arrangements in its place; the role of pressure groups in shaping public policy of the environment, abortion and the hiring of minorities; electoral reform; the control of civil servants; the rule of law

among nations; the place of moral principle and national interest in the conduct of foreign policy; or how far any citizen might have the right or duty to disobey an unjust law. The study of politics offers us the opportunity to become freer human beings and citizens because, whatever the subject of our immediate inquiry, the focus is always upon the ideas, institutions and processes that shape our lives.

The courses offered in year 2 and above fall into a number of fields and the department advises Politics majors (honors and pass students) to select courses from at least three of these fields:

Political philosophy: course numbers ending with 00-09, plus POLI 2F90;

Canadian politics: course numbers ending with 10-19 (see also the public administration and public policy fields);

International relations: course numbers ending with 20-29;

Comparative politics: course numbers ending with 30-49;

Public administration: course numbers ending with 50-59;

Public policy: course numbers ending with 60-69;

Unclassified special topics: course numbers ending with 70-79, plus POLI 4F99;

Scope and methods: course numbers ending with 80-89, plus POLI 3P91, 3P92.

The study of Politics may be usefully combined at the honors or pass level, with other disciplines, the choice depending upon the student's interests and capabilities. As well, it is possible, within the departmental offerings, to arrange a thematic program of study around a concentration of courses built to suit the student's particular interests.

POLI 1F90 or the permission of the instructor is a prerequisite for all courses in the department. For requirements concerning political philosophy and empirical methods, consult the notes on pass and honors programs.

All students in Politics, especially those proceeding to graduate work or to a career in the public service, are encouraged to become proficient in a language other than English, normally French. Students who develop interests in a particular geo-

graphical area are urged to select related courses in history, language and literature. COSC 1P91 and MATH 1P98 provide a sound background in those skills often employed in modern social science research. Questions about the Politics program should be directed to the undergraduate adviser.

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## Honors program

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Students may be admitted to the BA honors program at any time. The BA honors program provides students with the opportunity for a more intensive examination of issues in the field. POLI 1F90, 2F90, 2P80, 3P12, 3P91 (or 3P92) and 4P30 are required.

### Year 1

POLI 1F90; one humanities and one science context credit; two other credits (one of which, with the consent of the instructor, may be a year 2 POLI course).

### Year 2

Three credits in POLI numbered 2(alpha)00 - 2(alpha)99; two elective credits.

### Year 3

Three credits in POLI numbered 2(alpha)90 - 3(alpha)99; two elective credits.

### Year 4

Three credits in POLI numbered 4(alpha)00 - 4(alpha)99 or two year 4 and one year 3 POLI credits; two elective credits.

It should be noted that 3 credits numbered 3(alpha)90 or above must be included in all honors degrees. Honors students may consider the preparation of an honors thesis on a subject of special interest (see POLI 4F99).

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## Pass program

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Students enrolled in the pass program are required to take seven POLI courses,

normally POLI 1F90, three courses in year 2 and three in year 3. POLI 2P80 and either 2P01 or 2F90 are required.

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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### Combined major programs

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Students are likely to find that both parts of their program benefit if they combine studies in Politics with studies in another social science, such as Economics, Geography or Sociology; or with studies in a related field in a different faculty, such as Business or History. Politics also provides a sound disciplinary core when combined with an interdisciplinary program in Canadian Studies, Communications Studies, Labor Studies, Liberal Studies, Urban and Environmental Studies or Women's Studies.

#### Combined honors program

For a combined honors degree, the student must take POLI 1F90 and a minimum of six credits in POLI over years 2, 3 and 4; at least four credits should be numbered at the 2(*alpha*)90 level or above, including at least two credits at the 3(*alpha*)90 level or above.

Students in combined honors programs are required to take one credit from either POLI 2F90 (recommended) or 2P01 and any one of POLI 3P04, 3P06, 3V00-3V09, 4P01, 4P02, 4P04, 4V00-4V09. They are also required to take POLI 2P80, one-half credit from POLI 3P12 or 4P30 and one-half credit from POLI 3P91 or 3P92. With the permission of the undergraduate officer, methods courses which are required in other departments may be considered equivalents for POLI 2P80, 3P91 or 3P92.

#### Combined pass program

For a combined pass degree the student should take POLI 1F90 and a minimum of four credits in POLI over years 2 and 3; at least two of these should be numbered at the 2(*alpha*)90 level or above.

Students in combined pass programs are required to take POLI 2P01 (or 2F90) and POLI 2P80. With the permission of the undergraduate officer, a required methods course in another department may be considered an equivalent for POLI 2P80.

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### Politics and Business Administration

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Together with the Faculty of Business, the Department of Politics offers a special program leading to an honors BA in Politics and Business Administration. The general requirements for this program are the same as for other combined honors programs involving politics, but course selection is concentrated in the areas of public administration and law. This program is designed for anyone with an interest in public administration or administrative careers in governments, courts and related organizations.

#### Year 1

POLI 1F90; MGMT 1P91, 1P92; ECON 1P91, 1P92; one science and one humanities context credit (FREN 1F90 recommended for those with necessary prerequisites).

#### Year 2

POLI 2F12, 2P80; one additional credit in POLI, usually 2F90 (2P01 and one of 3P04, 3P06, 3V00-3V09, 4P01, 4P02, 4P04, 4V00-4V09 may be taken in place of 2F90); ACTG 2P11, 2P12; MGMT 1P95, 2P40; MATH 1P98.

#### Year 3

POLI 3F51, 3P12; one credit from POLI 3P11, 3P15, 3P16, 3P18, 3P26, 3P27, 3P33, 3P52, 3P65 and 3P66; OBHR 3P41, 3P42; MKTG 3P22; one elective credit. (ECON 3P14, 3P15 recommended.)

#### Year 4

POLI 3P91 or 3P92; POLI 4P54; one and one-half credits from POLI 4P01, 4P11, 4P14, 4P15, 4P50, 4P51, 4P52, 4P53, 4P65, 4V10-4V19; FNCE 3P92, 3P93; MGMT 3P30; one-half credit from OBHR 4P61, 4P62, 4P63, 4P66, 4P67, 4P68, 4P69, 4P72; one-half elective credit.

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### Politics and Canadian Studies

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Together with the Canadian Studies Program, the Department of Politics offers a special program leading to a BA (Honors or Pass) in Politics and Canadian Studies. The general requirements for this program are the same as for other combined major programs involving politics, but course selection is concentrated in the areas of Canadian politics, public policy and foreign policy. This program is designed to allow students to combine a specialized interest in Canadian politics with interdisciplinary study of the broader context of Canadian culture and society.

#### Honors program

##### Year 1

POLI 1F90, CANA 1F91, one science context credit, two elective credits (one credit from FREN 1F90, 1P01, 1P02, 1P03 highly recommended).

##### Year 2

POLI 2F12, 2P01, 2P80; one credit from CANA 2M90-2M99; one credit from CANA 2P07, 2P08, 2P09, 2P10; one elective credit.

##### Year 3

POLI 3P12; one and one-half credits from POLI 3F51, 3P11, 3P15, 3P16, 3P17, 3P18, 3P19, 3P28, 3P29, 3P66; CANA 3F91; one approved CANA credit at 2(*alpha*)90 level or above (see Note 1); one elective credit.

##### Year 4

POLI 3P91 or 3P92; one-half credit from POLI 3P04, 3P06, 3V00-3V09, 4P01, 4P02, 4P04, 4V00-4V09; one credit from POLI 4P11, 4P15, 4P50, 4P52, 4P54, 4V10-4V19, 4V60-4V69; CANA 4F80, 4F99; one elective credit.

#### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree (see Note 4).

## Politics

### Notes:

1. Approved Canadian Studies credits must be chosen from outside the disciplinary co-major (Politics).
2. POLI 2F90 may be taken in place of 2P01 (for Pass BA) or in place of 2P01 plus one of 3P04, 3P06, 3V00-3V09, 4P01, 4P02, 4P04, 4V00-4V09 (for Honors BA).
3. Students in either the honors or pass program must take one credit in French or in courses related to French Canada as part of their program. Eligible courses appear with an asterisk (\*) in the list of approved Canadian Studies courses in the Canadian Studies section of the calendar.
4. Since POLI 3P12 is for honors students only, students intending to complete the pass program should substitute another half credit POLI course for POLI 3P12 selected from the list under year 3.

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### Master of Arts (MA) program

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The MA program allows for study and directed research with a concentration in several fields including: Canadian politics, comparative politics, international relations, political philosophy, judicial and public administration.

For details about graduate courses and programs, see the *Graduate Calendar*.

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### Certificate program in public administration

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The Politics department also offers a program leading to a certificate in public administration. It provides an overview for interested people who do not wish to proceed to a degree and for those whose degree is in a different field. It is of special interest to people already employed in the public sector environment and wanting to embark on a program of part-time studies. The requirements for admission to the certificate program are the same as for admission to the degree

program. The equivalent of seven approved credits are required for the certificate.

(For students already holding a degree, see certificate requirements under *Academic Programs and Regulations*.)

### Course Program:

#### *Federal/provincial government*

POLI 1F90, 2F12, 3F51 (or 3P50 and 3P65), 4P52 and one-half credit from POLI 4P50, 4P51, 4P54; three elective credits.

#### *Municipal government*

UEST 1F90, POLI 1F90, 3F51 (or 3P50 and 3P65), 3P11, 4P11, 4P52, one-half credit from POLI 4P50, 4P51, 4P54; two elective credits.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

**Note: POLI 1F90 or permission of the instructor, is a prerequisite for admission to all other Politics courses except POLI 2P62.**

#### POLI 1F90

##### **Introduction to politics**

The basic concepts and institutions of political systems and the various approaches used to study these systems. Topics include: ideologies such as Liberalism, Conservatism and Communism; institutions of government including legislatures, bureaucracies and political parties; public opinion and voting; classes; elites and revolution.

*Lectures, seminar, 3 hours per week.*

#### POLI 2F12

##### **The government and politics of Canada**

(also offered as CANA 2F12)

Political institutions and processes of Canada. Major topics will include the constitution and federalism, regions and regionalism, the political attitudes and behavior of Canadians, parties and elections and the policy process.

*Lectures, seminar, 3 hours per week.*

#### POLI 2F20

##### **International politics**

An introduction to international politics focussing on the characteristics of the international system, the process of foreign policy formulation in individual states and the means of acting internationally.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in POLI 2P22 or 2P24.

#### POLI 2F90

##### **Political philosophy**

An examination of major works of political philosophy as these comprise the theoretical foundations of our own political order and fundamental alternatives to it. Among the writers and writings to be discussed are Plato, Aristotle, *The Bible*, Machiavelli, Hobbes, Locke, Rousseau, Marx and *The Federalist Papers*.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in POLI 200, 291hc or 292hc.

#### POLI 2P01

##### **Introduction to political philosophy**

Critical examination of classical and contemporary liberal democracy and alternatives to liberal democracy.

*Lectures, seminar, 3 hours per week.*

#### POLI 2P41

##### **The U.S.S.R. and its successor states**

A review and analysis of the historical, ideological, geographical and demographic factors which have shaped Soviet and post-Soviet society. Special attention will be given to nationalism, ethnic tensions, economic debates, societal values and behavior, leadership and forces affecting stability and division in the fifteen successor states of the USSR.

*Lectures, seminar, 3 hours per week.*

## POLI 2P42

**The government and politics of China**  
Political institutions and processes of the People's Republic of China.  
*Lectures, seminar, 3 hours per week.*

## POLI 2P43

**The government and politics of India**  
Society, government and political processes in India, with special attention to leadership, party politics, caste and communal relations, regionalism, economic planning and change in the villages.  
*Lectures, seminar, 3 hours per week.*  
Credit will not be granted to students who have prior credit in POLI 260hc.

## POLI 2P45

**The government and politics of the United Kingdom**  
The parliamentary form of government as it has evolved and is practised in the United Kingdom. Topics include: the development of constitutional principles and their application today; the operation of the executive and legislature; the roles of parties and pressure groups; the significance of extraparliamentary checks; and the impact of the system, especially on Canada and the United States.  
*Lectures, seminar, 3 hours per week.*  
Credit will not be granted to students who have prior credit in POLI 215hc.

## POLI 2P46

**The government and politics of the United States**  
The American political system and the institutions of the federal government in the context of the constitutional separation of powers and the political party structure. Related topics include federalism, elections and voting behavior, civil rights and selected public policy issues.  
*Lectures, seminar, 3 hours per week.*  
Credit will not be granted to students who have prior credit in POLI 216hc.

## POLI 2P62

**Government and politics**  
An introduction to government and politics intended for students in the second year of the BAcc program.  
*Lectures, seminar, 3 hours per week.*  
Restriction: Open only to BAcc majors with a minimum of 5.0 overall credits.  
Credit will not be granted to students who have prior credit in POLI 1F90.

## POLI 2P80

**Political analysis**  
Research methodologies and skills commonly used by political scientists. Topics include the evolution of political science; the ways in which empirical political research is carried out; advantages and limitations of the scientific approach in political analysis. Research skills include the development of logical arguments; finding and presenting supporting evidence; and understanding common statistical measures.  
*Lectures, seminar, 3 hours per week.*  
Credit will not be granted to students who have prior credit in POLI 2P81, 299 or 205hc.

## POLI 2V40-2V49

**Government and politics of a selected nation state**  
The political processes and institutions of a nation state not included among regular departmental offerings.  
*Lectures, seminar, 3 hours per week.*

## POLI 3F30

**Comparative politics: regimes and political life**  
Do regimes matter? Different forms of government, their origins and their effects on people's lives. A comparison of different types, including Communist, democratic and traditional regimes, while emphasizing more detailed analyses of advanced democratic systems. Our goal will be to draw conclusions about the capabilities of different regimes to manage conflict and change.  
*Lectures, seminar, 3 hours per week.*  
Note: This course is a prerequisite for most fourth-year courses in comparative politics.

## POLI 3F51

**Canadian public administration**  
(also offered as LABR 3F51)  
Theory and practice of public administration in Canada. Some of the topics covered will be organization of departments, regulatory agencies and crown corporations; financial and personnel administration; responsibility and accountability.  
*Lectures, seminar, 3 hours per week.*  
Prerequisite: POLI 2F12 or permission of the instructor.  
Credit will not be granted to students who have prior credit in POLI(MGMT) 3P50.

## POLI 3P04

**Politics and morality**  
Contrasting accounts of the role of justice and other moral principles in political life and in the conduct of political leaders and states.  
*Seminars, 3 hours per week.*  
Prerequisite: POLI 2P01 or 2F90 or permission of the instructor.

## POLI 3P06

**Philosophy, politics and the family**  
An examination of the relations that comprise the family and of the significance of these for the political community as both have been treated by ancient and modern political philosophers and by contemporary feminists and their critics.  
*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 2P01 or 2F90 or permission of the instructor.  
Credit will not be granted to students who have prior credit in POLI 3P05 or 3V05.

## POLI 3P11

**Urban politics and administration**  
Local government and politics in Canada with particular reference to Ontario. Topics include: municipal organization, metropolitan and regional government, provincial-municipal relations, elections, councils and councillors, citizen participation, property taxation and municipal finance, selected policy areas and theories of local government.  
*Lectures, seminar, 3 hours per week.*  
Credit will not be granted to students who have prior credit in POLI 350 or 359hc.

## POLI 3P12

**Honors seminar: Canadian politics**  
Analysis of selected contemporary issues in Canadian politics.  
*Seminars, 3 hours per week.*  
Prerequisite: year 3 honors standing.  
Restriction: Open only to POLI (single or combined) majors with a minimum of 8.0 overall credits and a 68 percent major average or, if taken in year 4, year 4 honors standing.

## POLI 3P15

**Politics in Ontario**  
Major aspects of political life in Ontario, including province-building, voting behavior, party systems, policy making and administrative apparatus.  
*Seminars, 3 hours per week*

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Prerequisite: POLI 2F12 or permission of the instructor.  
Credit will not be granted to students who have prior credit in POLI 314hc.

### POLI 3P16 Politics in Québec

Québec's political, social and economic evolution since 1945. Topics to be considered include old and new varieties of nationalism, the Quiet Revolution, the changing roles of church and state, the decline of the Anglophone minority and Québec's impact on Canadian federalism.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 2F12 or permission of the instructor.

### POLI 3P17 Politics and the mass media in Canada (also offered as COMM 3P17)

The Canadian mass media and their relationship to the political process.

*Lectures, seminar, 3 hours per week.*

### POLI 3P18 Law and politics

Canadian constitutional law with particular emphasis on the protection of civil liberties both before and after the adoption of the Charter of Rights. An examination of courts from both legal and political perspectives.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 2F12 or permission of the instructor.

Credit will not be granted to students who have prior credit in POLI 231hc.

### POLI 3P19 The Canadian judicial process

How courts operate and how judges make decisions in criminal, civil and family law cases. Course material will be drawn from empirical research, judicial decisions and direct observation in court. Topics will include plea bargaining, gender bias in the courts and aboriginal justice.

*Lectures, seminar, 3 hours per week.*

### POLI 3P24 International politics of the Third World

International relations in the Third World (Africa, Asia and Latin America) and international relations between

Third World polities and others in the international system. Concerns include the political means and international consequences of Third World quests for autonomy, development and dignity.

*Seminars, 3 hours per week.*

Prerequisite: POLI 2F20 or permission of the instructor.

Note: POLI 3P43 is recommended as preparation for this course.

Credit will not be granted to students who have prior credit in POLI 375hc taken in 1985/86.

### POLI 3P25 United States foreign policy

An examination of how U.S. foreign policy is made, the domestic and external sources of foreign policy decisions and the implications of implementation for the international systems and for other factors.

*Seminars, 3 hours per week.*

Prerequisite: POLI 2F20.

### POLI 3P26 International law

Principles of international law and their application in international politics.

*Lectures, seminar, 3 hours per week.*

Note: POLI 3P27 is recommended as preparation for this course.

### POLI 3P27 International organization

Principles and problems of global and regional organizations as these constitute and reflect international law and politics.

*Lectures, seminar, 3 hours per week.*

Note: Recommended as preparation for POLI 3P26.

### POLI 3P28 Canadian foreign policy

The foreign policy formulation process in Canada; significant factors, both domestic and external, which contribute to the shaping of overall and specific policy objectives.

*Seminars, 3 hours per week.*

Prerequisite: POLI 2F12 or 2F20.

Credit will not be granted to students who have prior credit in POLI 425hc.

### POLI 3P29 Canadian-American relations

The structure and operations of the bilat-

eral relationship. Topics include foreign policy management, trade and trans-border economic activity, domestic political forces, conflict and co-operation.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 2F20 or permission of the instructor.

Credit will not be granted to students who have prior credit in POLI 375hc taken in 1985/86.

### POLI 3P33 The state and economic life (also offered as LABR 3P33)

Political economy and the role of the state. Relationships between politics and markets and between democracy, capitalism and socialism. Topics discussed will include regulation, public ownership, taxation, fiscal and monetary policy, income support programs, regional development and the screening of foreign direct investment.

*Lectures, seminar, 3 hours per week.*

### POLI 3P34 Comparative political parties

An analysis of parties and party systems with an emphasis on Canada, Western Europe and the United States.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 3F30 (may be taken concurrently) or permission of the instructor.

Credit will not be granted to students who have prior credit in POLI 334hc.

### POLI 3P40 Communist and post-Communist political systems

The evolution and functioning of political systems in selected states of central Europe, the Baltic region and the Balkan Peninsula. Special attention is paid to the upsurge of ethnic unrest and the breakdown of certain federal states and the emergence of new states.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 3F30 or 2P41 and 2P42 (which may be taken concurrently) or permission of the instructor.

### POLI 3P43 Politics in the Third World

The comparative study of political institutions and processes of selected developing countries. Topics include: the nature of traditional societies; the impact of

colonialism and neo-colonialism; nationalism; the role of elites, political parties and the military; state-building; and the quests for economic development and national integration.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 3F30 or 2P42 and 2P43 (which may be taken concurrently) or permission of the instructor.

Credit will not be granted to students who have prior credit in POLI 338hc.

#### POLI 3P44

##### **Canada and the politics of Japan, Korea, Taiwan and Hong Kong**

Issues in comparative politics as they relate to these "economic dragons" of East Asia. Reference will also be made to Canada's increasing interdependence with the countries concerned.

*Seminars, 3 hours per week.*

Prerequisite: POLI 3F30 (may be taken concurrently) or permission of the instructor.

#### POLI 3P50

##### **Introduction to public administration**

The role of the public sector in the marketplace and the internal operation of government organizations. Special emphasis will be given to comparing public and business administration and to government-business relations.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 1F90.

Credit will not be granted to students who have prior credit in POLI(MGMT) 3F51, MGMT 3P50 or POLI 351 (MGMT 320).

#### POLI 3P52

##### **Politics, ethics and public policy**

Issues of responsible and ethical behavior by elected and appointed government officials, with particular emphasis on the behavior of public servants. Among the topics to be examined are conflicts of interest, political rights of public servants, political neutrality, administrative responsibility, confidentiality/freedom of information, privacy, accountability and the public interest.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI(MGMT) 3F51 or POLI(MGMT) 3P50 or permission of the instructor.

Credit will not be granted to students who have prior credit in POLI 375 in 1986/87.

#### POLI 3P65

##### **Introduction to public policy**

(also offered as LABR 3P65)

Major theories, approaches and concepts in the study of public policy. Topics may include: the nature of public policy studies, contending theories of the state and public policy making, the growth of the state and the expansion of the scope of public policy activities and alternative modes of state intervention.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 2F12 or 3F51 or 3P50 or permission of the instructor.

#### POLI 3P66

##### **Environmental policy, law and administration**

Public policies, laws and agencies for the protection and management of the Canadian environments.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in POLI 352hc.

#### POLI 3P71

##### **Gender, sex and politics**

(also offered as WISE 3P71)

Theoretical and practical issues in the relationships among gender, sex and politics, such as sexual equality and its nature and implications for public and private life.

*Lectures, seminar, 3 hours per week.*

#### POLI 3P91

##### **Quantitative political analysis**

The statistical analysis of quantitative political data and the use of computers in political research. Topics include: central tendency and dispersion; association and correlation; regression and analysis of variance; statistical significance; and the SPSS\* computer analysis program.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 2P80 (2P81).

Credit will not be granted to students who have prior credit in POLI 3P81.

#### POLI 3P92

##### **Qualitative political analysis**

The use of qualitative techniques in research and political analysis. Topics include: qualitative versus quantitative research; qualitative research design; ethical problems in qualitative research; interviewing; participant and non-participant observation; content analysis;

use of microcomputers in qualitative research.

*Lectures, seminar, 3 hours per week.*

Prerequisite: POLI 2P80 (2P81).

#### POLI 3V00-3V09

##### **Politics and philosophy**

Philosophic issues raised by various questions of immediate importance in contemporary moral and political life.

Prerequisite: POLI 2P01 or 2F90 or permission of the instructor.

#### POLI 3V70-3V79

##### **Special topics in politics**

Topics selected from year-to-year on the basis of instructional expertise and student interest.

*Lectures, seminar, 3 hours per week.*

#### POLI 4F99

##### **Honors thesis**

A thesis based on individual study and research under faculty supervision. Topics may come from any field in the discipline and may involve library research, field work and empirical analysis. The course is open only to students completing the honors program. Students must consult the undergraduate adviser about topics, regulations and a faculty adviser before registration.

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

#### POLI 4P01

##### **The philosophy of law**

Traditional and contemporary accounts of law and their implications for issues of contemporary concern.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

#### POLI 4P02

##### **Principles of classical political philosophy**

An examination of the character of pre-modern political philosophy through specific works of such philosophers as Plato and Aristotle. Special attention will be paid to those features of ancient philosophy that most markedly distinguish ancient political science and philosophy

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from that of modernity.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

### POLI 4P04

#### **Politics and tyranny**

Comparative accounts of ancient and modern tyranny are examined with a view to assessing whether political domination has varied significantly in the Western tradition.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

### POLI 4P11

**Issues in local government and politics**  
Selected issues in local government and politics. Topics may include: regional and metropolitan government, provincial-municipal relations and theories of local government.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Credit will not be granted to students who have prior credit in POLI 459hc.

### POLI 4P14

#### **Federalism in Canada**

Aspects of the Canadian federal system. Specific topics will vary from year-to-year, but may include: social diversity and federal institutions; federalism and the party system; the role of the courts; federal-provincial financial relations; federalism and the policy process; the evolving role of provincial authorities; and intergovernmental relations.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

### POLI 4P15

#### **Canadian political economy**

An historical perspective on the development of the political economy tradition in Canada, from the writings of Innis, Mackintosh and Creighton to contempo-

rary neo-Marxist and dependency theorists. Selected issues may include foreign investment, regional development, the labor movement, resources and Canada's place in the new international economic order.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Credit will not be granted to students who have prior credit in POLI 413hc in 1986/87.

### POLI 4P20

#### **International political, legal and organizational processes**

A study of international phenomena in light of their relationship to theories of international relations. Seminar topics may include patterns of relations between the great powers, including spheres of influence; the use and disuse of international law by various actors as a means of co-ordinating international relations; and the difficulties of organizing effective international action.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

### POLI 4P22

#### **Foreign policies of the great powers**

Factors shaping the foreign policies of selected major powers along with the techniques adopted to achieve policy goals.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

### POLI 4P26

#### **International politics and national security**

Threat and use of armed force in the international system of the emerging post-Cold War world: regional conflicts, proliferation of modern arms technology, the evolving roles of major powers and the security capabilities of the United Nations.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or

combined majors) with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: POLI 2F20 or permission of the instructor.

### POLI 4P27

#### **Theories of international relations**

A critical examination of international relations theory with emphasis on the nature of the international system and its relationship to the choices and actions of individual states.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Credit will not be granted to students who have prior credit in POLI 325hc.

### POLI 4P30

#### **Honors seminar: World politics**

Analysis of selected contemporary issues in comparative and international politics.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major or approval to year 4.

### POLI 4P32

#### **Comparative mass media**

(also offered as COMM 4P32)

A critical examination of selected problems concerning the mass media and the political process in Canada and other states.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) and COMM (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

Prerequisite: POLI 3F30 or permission of the instructor.

### POLI 4P36

#### **Political systems transformation**

Comparative study of patterns of transformation and transition of totalitarian, authoritarian and paternalistic systems of various types towards political pluralism and democracy. Selected regimes -- Communist, nationalist and religious -- in different parts of the world are drawn upon to examine the dynamics of politi-

cal and social change and identify transitory stages of this process.

*Lectures, seminar, tutorial, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: One of POLI 2P41, 2P42, 3F30, 3P40 or permission of the instructor.

Credit will not be granted to students with prior credit in POLI 4V36.

#### POLI 4P38

##### **Ethnicity and politics**

A comparative analysis of the relationships between ethnicity and politics focussing upon those ethnic communities that produce autonomist or separatist movements. Topics include: the nature of ethnic identities; persistence and change in ethnic communities; the politicization of ethnicity; ethnic politics and the state; ethnic nationalism and autonomist and separatist movements; interethnic conflicts; and conflict regulation in plural societies.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: POLI 3F30 or permission of the instructor.

#### POLI 4P39

##### **Elites and power**

The bases of power and of the degree of power concentration in government, industry, bureaucracy and the media in Canada, the United States and other selected countries and an analysis of the characteristics, life styles, interrelationships and actions of the individuals in senior positions of power.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: POLI 3F30 or permission of the instructor.

#### POLI 4P41

##### **Non-democratic regimes**

Comparative and historical study of non-democratic rule. Topics may include

authoritarian and totalitarian regimes, fascist and Communist states, military regimes and other non-democratic forms of government.

*Lectures, tutorial, seminar, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: One of POLI 2P41, 2P42, 3F30, 3P40 or permission of the instructor.

#### POLI 4P43

##### **Comparative politics of Southeast Asia**

Through assigned reading, research design and research paper, the course explores problems in comparative politics in selected countries of Southeast Asia.

*Lectures, tutorial, seminar, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: POLI 3F30 or permission of the instructor.

Credit will not be granted to students who have prior credit in POLI 461hc.

#### POLI 4P45

##### **Politics in advanced democratic systems**

A comparative study of political institutions and processes of advanced democratic systems in Europe and elsewhere.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: POLI 3F30 or permission of the instructor.

#### POLI 4P47

##### **Arab politics**

Topics include religion, pan-Arab nationalism and political culture; problems of economic development; the Palestinian factor in Arab politics; the Gulf War and its aftermath; and a comparative analysis of ways in which political processes and institutions have influenced and responded to these forces.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or

combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: POLI 3F30 or permission of the instructor.

#### POLI 4P50

##### **Machinery of government**

An advanced treatment of the structures and processes of federal and provincial government in Canada. There will be particular emphasis on the operation of government departments, central agencies, regulatory agencies and crown corporations.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: one of POLI(MGMT) 3F51 or POLI(MGMT) 3P50 or permission of the instructor.

#### POLI 4P51

##### **Public administration theory**

Selected major issues in the theory of public administration.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: one of POLI(MGMT) 3F51 or POLI(MGMT) 3P50 or permission of the instructor.

#### POLI 4P52

##### **Personnel and financial administration in the public sector**

The politics and management of human and financial resources in Canadian governments. Special emphasis is placed on financial management, the budgetary process, collective bargaining and such personnel processes and problems as recruitment, selection, training and affirmative action.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: one of POLI(MGMT) 3F51 or POLI(MGMT) 3P50 or permission of the instructor.



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### POLI 4P53

#### **Comparative public administration**

The theory of comparative public administration and a comparative analysis of administrative processes, institutions and problems in selected states.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: one of POLI(MGMT) 3F51 or POLI(MGMT) 3P50 or permission of the instructor.

### POLI 4P54

#### **Business-government relations**

The management of relations between business organizations and governments in Canada. Special emphasis is placed on current problems in business-government relations, the legislative and regulatory environment of business, government promotion of private enterprise, public enterprise and the means by which business organizations influence government decision making.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4. Prerequisite: one of POLI(MGMT) 3F51 or POLI(MGMT) 3P50 or permission of the instructor.

Credit will not be granted to students who have prior credit in POLI 449hc or 452.

### POLI 4V00-4V09

#### **Selected problems in political philosophy**

A particular writer, work or theoretical problem in political philosophy will be carefully examined.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

### POLI 4V10-4V19

#### **Issues in Canadian politics**

A course structured by a faculty member having specialized interest in an area within the discipline, normally offered on an experimental basis.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

### POLI 4V20-4V29

#### **Selected problems in international relations**

Selected problems and issues drawn from both the system and nation-state levels of international politics.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

### POLI 4V30-4V39

#### **Selected problems in comparative politics**

A comparative study of selected political institutions, processes or policies in various states.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

### POLI 4V60-69

#### **Selected topics in Canadian public policy**

A course structured by a faculty member having a special interest in an area of Canadian public policy.

*Seminars, 3 hours per week.*

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

### POLI 4V70-4V79

#### **Politics tutorial**

Guided readings on a particular topic which is not covered in the department's regular course offerings. Topics must be chosen in consultation with a faculty member willing to supervise the tutorial. Further information is available from the undergraduate adviser.

Restriction: Open only to POLI (single or combined) majors with a minimum of 14.0 overall credits and either a 70 percent major average or approval to year 4.

# Pre-professional Studies for the Health Sciences

*Faculty adviser*

J. C. Lewis, Biological Sciences

Brock University offers a selection of courses which meet the admission requirements for various professional schools in the health sciences. Through the careful choice of electives each student's program can be designed to meet the requirements of a specific professional school or schools and to provide a thorough education in areas essential to the intended profession. Students successfully completing this program will receive a BSc degree in general studies. The basic recommended courses for all students are:

### *Year 1*

BIOL 1F90; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; PSYC 1F90; MATH 1P97, 1P98; one humanities context credit.

### *Year 2*

BIOL 2F01; one credit from BIOL 2P90, 2P91, 2P98; PHYS 1F20, 1F25 or 1F90; CHEM 2P20, 2P21; one elective credit.

### *Year 3*

Two credits from: BCHM 3P01, 3P02, BIOL 2P90, 2P91, 2P98 (if not taken in year 2), BIOL 3P22, 3P23, 3P28, 3P34, 3P35, 3P42, 3P50, 3P51; three elective credits.

Four elective credits are provided. In choosing them students should be familiar with the admission requirements of the intended professional school. A course pattern for years 2 and 3 must be approved by Professor J. C. Lewis, Department of Biological Sciences, the designated faculty adviser, prior to registration for year 2. The following are examples of recommended electives for specific professional schools.

### **Dentistry and Medicine:**

The basic course requirements for entry into medicine and dentistry can be fulfilled in two years and application to

most Ontario medical and dental schools may be made during the second- or third-year. Students in their third year should consider choosing their electives from the BIOL courses listed as year 3 options, BIOL 2P04, 2P05, CHEM 2P98, 3P20 and 3P21. Year 2 and year 3 PSYC courses are also recommended.

### **Physiotherapy, Occupational Therapy, Rehabilitation Therapy:**

The basic course requirements for entry into most physical therapy schools are fulfilled in the first year. Students in their second- and third-year should consider choosing their electives from PHED 1P92, 1P94 for year 2 and PHED 2P04, 2P70, 2P97, 3P04, 3P90 and 3P92 for year 3.

### **Canadian Memorial Chiropractic College:**

The basic course requirements for entry into CMCC are fulfilled by any modification of the first two years of the outlined program that includes: BIOL 2F01; ENGL 1F92 or 1F99 (English Literature not accepted); PHYS 1F25 or 1F90; PSYC 1F90; two additional humanities or social sciences credits.

Calendars of specific professional schools should be consulted for their particular entry requirements.

# Psychology

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## Officers of instruction

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### Chair

Linda Rose-Krasnor

### Undergraduate program officer

David DiBattista

### Professors

Jack R. Adams-Webber

John G. Benjafield

Harry T. Hunt

John J. Lavery

Daniel S. Lordahl

Robert D. Ogilvie

Edward W.G. Pomeroy

Joan M. Preston

Stanley W. Sadava

Sidney J. Segalowitz

Paul D. Tyson

William G. Webster

### Associate professors

Kathryn Belicki

James Bradford

David DiBattista

Nancy Johnston

Darla MacLean

John Mitterer

Peter Ramm

Linda Rose-Krasnor

Dawn E. Witherspoon

### Assistant professors

H. Willard Bradley

Nancy DeCourville

Jane Dywan

Robert Nadon

### Instructor

Carolyn Hafer

### Co-ordinator

Barbara Anderson

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## General information

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*Mackenzie Chown, B326*

### General prerequisites

PSYC 1F90 or permission of the instructors is a prerequisite for all courses in the Department of Psychology. For all year 3 courses (PSYC 3(alpha)00-3(alpha)99), three credits in PSYC beyond PSYC 1F90, third-year standing or permission of the instructor are required. For all year 4 courses (PSYC 4(alpha)00-4(alpha)99), admission to year 4 or permission of the instructor and the chair is required. See also additional prerequisites with course descriptions. The department believes that a broadly based liberal arts background is particularly appropriate in conjunction with a major in Psychology and accordingly does not encourage students to take more than three Psychology courses in year 2 or 3. It is recommended that honors students acquire some background in Philosophy, Sociology, Biology or Mathematics as part of their undergraduate program.

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## Honors program

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Honors students are required to take PSYC 1F90, 2F23, 3F40, 4P92, 4P93 and six additional credits in PSYC, including two at the 2(alpha)90 or above and two at the 3(alpha)90 or above.

### Year 1

PSYC 1F90; one humanities and one science context credit; two elective credits.

### Year 2

PSYC 2F23; two credits in PSYC numbered 2(alpha)00 - 2(alpha)99; two elective credits.

### Year 3

PSYC 3F40; two credits in PSYC numbered 2(alpha)90 - 3(alpha)99; two elective credits.

Entrance to year 4 requires both honors standing and a minimum average of 70 percent in required PSYC courses (PSYC 1F90, 2F23, 3F40).

### Year 4

PSYC 4P92, 4P93; two credits in PSYC 3(alpha)90 - 4(alpha)99; two elective credits.

### Notes:

1. PSYC 3F40 is required for an honors degree in Psychology and must be taken in year 3 before admission to year 4 of the honors program.

2. Students may apply to do an intensive individual study in any of the areas described in 4P04, 4P05, 4P06, 4P07, 4P08 and 4P09 if they have already shown particular competence in the area. The subject of study must be chosen in consultation with a faculty member after acceptance into year 4. Permission of the chair and the faculty member is required.

3. Students planning to undertake graduate studies in Psychology are strongly urged to take PSYC 4F91.

## Entrance into honors Psychology for students with a pass BA in Child Studies

For the purpose of completing the honors program in Psychology, the following courses may be included as Psychology credits toward the seven needed to enter the honors program: CHST 2F10, 3F96, 3P11, 3P23, 3P56, 3P60, 3P73, 3P74, 3Q94.

PSYC 1F90 and either 2F23 or 2F24 are required.

Entrance to year 4 requires both honors standing and a minimum average of 70 percent in required PSYC courses (PSYC 1F90, 2F23, 3F40).

### Year 4

PSYC 3F40, 4P92, 4P93; two credits at the year 4 level in PSYC (see above); one elective credit.

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**Pass program**


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Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

Pass students are required to take PSYC 1F90, 2F23 and five other credits in PSYC, three of which should be at the year 3 level.

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**Combined major programs**


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Students may take a combined major in Psychology and a second discipline. The requirements in Psychology for a pass combined major are: PSYC 1F90, 2F23; three other credits in PSYC, one in year 2 and two in year 3.

The requirements in Psychology for an honors combined major are: PSYC 1F90, 2F23, 3F40, 4P92, 4P93; three other credits in PSYC, one of which will be a year 3 credit and one a year 4 credit (see above). For requirements in the other discipline, the student should consult the relevant department. It should be noted that not all departments provide a combined major option. All combined major students should consult with the chair to avoid duplication of courses.

Entrance to year 4 requires both honors standing and a minimum average of 70 percent in required PSYC courses (PSYC 1F90, 2F23, 3F40).

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**Prerequisites and restrictions**


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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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**Description of courses**


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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

**PSYC 1F90**
**Introduction to psychology**

Basic concepts and contemporary issues in psychology with special attention to learning, physiological, developmental, clinical and social psychology.

*Lectures, seminar, 3 hours per week.*

Note: Prerequisite to all courses in Psychology except PSYC 2F24.

**PSYC 2F12**
**Life-span development**

An introduction to the conceptual bases of life-span development, a survey of relevant research and an overview of methodological issues. Topics illustrating life-span developmental research and theory will be drawn from the following areas: intellectual, moral, personality, physiological, sexual and social development.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and HLST (single) majors until date specified in BIRT guide.

Prerequisite: PSYC 1F90.

Credit will not be granted to students who have prior credit in CHST 2F10.

**PSYC 2F20**
**Cognition**

The acquisition and utilization of knowledge. Topics may include: attention and memory, concepts, imagery and cognitive maps, problem solving and reasoning, judgment and decision making, language and thought, intelligence and creativity, cognitive development, applications of cognitive psychology.

*Lectures, seminar, 3 hours per week.*

Prerequisite: PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 2F90.

**PSYC 2F23**
**Research design**

Principles of experimental design, systematic assessment and data analysis will be dealt with in the context of psychological research.

*Lectures, tutorial, 4 hours per week.*

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors.

Prerequisite: PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 2F24.

**PSYC 2F24**
**Research design in the behavioral sciences**

Basic issues in research design, data collection and statistics in the context of research in the behavioral sciences.

*Lectures, tutorial, 4 hours per week.*

Restriction: Not open to PSYC (single or combined) and NEUR (single) majors.

Prerequisite: One social science credit.

Credit will not be granted to students who have prior credit in PSYC 2F23.

**PSYC 2F25**
**Dynamics of personality**

Basic concepts and contemporary issues in personality theory and research including intrapersonal and interpersonal dynamics of coping, defence, growth and self-actualization.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) majors until date specified in BIRT guide.

Prerequisite: PSYC 1F90.

**PSYC 2F30**
**An introduction to social psychology**

Theories, methods, research and issues of contemporary social psychology; topics include: social perception and cognition, attitudes, influence, attraction, aggression, altruism, communication, conflict, group and collective behavior; the psychological study of social issues pertaining to prejudice, law, environment and health.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and HLST (single) majors until date specified in BIRT guide.

Prerequisite: PSYC 1F90.

**PSYC 2F36**
**Physiological psychology**

Biological aspects of behavior; the functional activities of the neuron and the interrelationships among neural systems (brain organization). Special topics will include: the psychobiology of sensory and motivational systems, emotion and

## Psychology

affect, learning, memory, language and consciousness.

*Lectures, lab, 4 hours per week.*

Restriction: Open only to PSYC (single or combined), HLST (single) and NEUR (single) majors until date specified in BIRT guide.

Prerequisite: PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 2F98.

### PSYC 2F45

#### Learning

A presentation of variables and/or conditions which contribute to the learning process including a survey of the basic experimental findings and theoretical issues related to learning. An emphasis will be placed on learning in non-human animals.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) majors until date specified in BIRT guide.

Prerequisite: PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 335.

### PSYC 2F91

#### Perception

After grappling with some of the theoretical problems of seeing and hearing, the actual mechanisms are discussed. Once the basic problems of pattern recognition, memory and attention have been discussed, the horizon will broaden to include the influence of culture, motivation, personality and pathology on perception.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), HLST (single) and NEUR (single) majors until date specified in BIRT guide.

Prerequisite: PSYC 1F90.

### PSYC 2F97

#### Experiential psychology

Subjective experience (altered states of consciousness) and methods as an alternate way of 'doing' psychology. Phenomena of dreams, psychedelic drugs, hypnosis, schizophrenia, religious mysticism and the eastern meditative traditions serve as the focus of discussion. Orienting conceptual frameworks come from the introspective and phenomenological traditions of psychol-

ogy, social science and psychiatry, as well as holistic-constructivist approaches to cognition and symbol formation.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) majors until date specified in BIRT guide.

Prerequisite: PSYC 1F90.

### PSYC 2P91

#### Health psychology

Psychological aspects of health and illness. The prevention and treatment of illness and the maintenance of wellness. The behavioral and social factors that play a role in the etiology of health and illness. Contributions from scientific investigation and from professionals in the health care system will be reviewed.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and HLST (single) majors until date specified in BIRT guide.

Credit will not be granted to students who have prior credit in PSYC 3F95, 3P81.

### PSYC 2P93

#### Psychology of women

(also offered as WISE 2P93)

This is an introductory course aimed at understanding some of the social, personal and political implications of gender. Topics will include: theoretical perspectives on the study of gender differences, stereotypes, sexuality, biological influences, as well as issues related to achievement, intimacy, mental and physical health, power and justice.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and WISE (combined) majors until date specified in BIRT guide.

Prerequisite: PSYC 1F90.

### PSYC 3F08

#### Psychology of language

(also offered as COMM 3F08)

Psychological processes involved in language including the study of meaning, language development in children, language and thought, listening, as well as special interest topics such as bilingualism and written language.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and COMM (single or

combined) majors until date specified in BIRT guide. Students must have a minimum of 7.5 overall credits.

Prerequisite: Third-year standing and PSYC 1F90 or COMM 1F90 or consult the instructor for permission to register.

### PSYC 3F10

#### Psychology of television

(also offered as COMM 3F10)

Psychological aspects of the visual, auditory and content dimensions of television will be examined. The applicability to television of several psychological theories, such as cognitive and information processing, perceptual and attentional theories, social learning, interpersonal communication, mass communication and developmental perspectives will be evaluated.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and COMM (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 7.5 overall credits.

Prerequisite: PSYC 1F90 or COMM 1F90 or consult the instructor for permission to register.

### PSYC 3F20

#### Abnormal psychology

Major theories which have emerged to explain aberrant and dysfunctional behavior are considered and evaluated. Consideration is given to the scientific, moral/ethical and political foundation of this area of study.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

### PSYC 3F40

#### Psychological research

A laboratory and lecture course in which students are exposed to research methods in several areas of psychology; emphasis is placed on developing the student's capacity to evaluate psychological hypotheses through participation in group and individual research projects.

*Lectures, lab, 5 hours per week.*

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with a major average of 68 percent and

with a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.  
Prerequisite: PSYC 2F23.

#### PSYC 3F45

##### **Comparative psychology**

A lecture and laboratory course in problems of experimental method and research findings in comparative animal behavior; emphasis will be placed on the mechanisms of behavior pattern in infra-human species.

*Lectures, seminar, lab, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 240.

#### PSYC 3F46

##### **The psychology of eating**

Biological and environmental factors influencing food consumption in animals and in humans, both theoretical and applied issues. Topics discussed will include: physiological control of food intake; the nature and importance of taste and smell; biological, social and cultural factors influencing the choice of foods; the effects of food upon behavior; abnormal food-related behaviors, such as overeating, anorexia nervosa and bulimia.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and HLST (single) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 2F93.

#### PSYC 3F91

##### **Neuroscience**

The central nervous system. First-term treats neurophysiology and neurochemistry and the neurochemical bases of mental illness. Second-term topics include: visual neurophysiology and human neuropathology including epilepsy, migraine, infarct and neoplasm. Emphasis is on physiological causes of neuropathology, rather than on functional disabilities of patients. Lab topics

include: surgery, histology and autoradiography.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), NEUR (single) and HLST (single) majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 2F36 or permission of the instructor.

#### PSYC 3F96

##### **Psychology of the exceptional child** (also offered as CHST 3F96)

An integration of theoretical, experimental and clinical approaches to the development of the child with special needs; i.e., the child who is mentally retarded, perceptually handicapped. Students will be required to fulfil a supervised practicum working with an atypical child. Field trips will be arranged.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined), LING (single or combined) and BA/BE/Ed majors with a minimum overall average of 78 percent and with a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 2F12 or CHST 2F10. Note: Enrolment limited to 35 students per section, to be determined by relative overall average.

Credit will not be granted to students who have prior credit in PSYC(CHST)300.

#### PSYC 3F97

##### **Personality assessment and research**

Current issues in the general areas of individual social development, interpersonal communication, person perception, friendship formation, personality change, implicit personality theory, schizophrenia, neurosis, marital, individual and group therapy, perception of the environment, professional training and role playing. Assessment will be on the basis of individual contracts.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

#### PSYC 3P11

##### **Theories in developmental psychology**

(also offered as CHST 3P11)

Current theories in developmental psychology and recent controversies and evidence concerning them. The student will study human development from an integrated approach.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined) and BA/BE/Ed majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 2F12 or CHST 2F10 or permission of the instructor.

Note: Enrolment limited to 65 students per section.

Credit will not be granted to students who have prior credit in PSYC(CHST) 3F11.

#### PSYC 3P18

##### **Adolescent development**

Theories and methods of life-span development as they apply to the special issues that emerge during adolescence. Topics include: thinking processes, identity formation, physiological change, sexuality and sex roles, family and peer relationships, schooling, vocational choices and moral development.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined), HLST (single) and BA/BE/Ed majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 2F96 or 387hc.

#### PSYC 3P19

##### **Special topics in adolescent development**

Discussion of those factors that provide special challenges for adolescents, their families and educators during the transition from childhood to adulthood. Topics include: abnormal development, special problems of the handicapped adolescent, school, pregnancy and parenting, substance abuse, delinquency and mental health.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single

## Psychology

or combined), CHST (single or combined) and BA/BEEd majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 3P18 or permission of the instructor.

Credit will not be granted to students who have prior credit in PSYC 2F96 or 387hc.

### PSYC 3P23

#### **Psychology of parenting** (also offered as CHST 3P23)

The determinants, varieties and consequences of parenting. The focus is on psychological research findings in contemporary parenting/parenthood issues. Topics to be examined include: the transition to parenthood, different styles of parenting, dual-career parents and abusive parents.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined) and BA/BEEd majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 2F12 or CHST 2F10.

Note: Enrolment limited to 65 students per section.

### PSYC 3P25

#### **Motivation**

Review and discussion of the following motivational variables: expectancy, incentive, self-actualization, personal causation, control, agency, growth, effectance, attribution, dissonance, curiosity, meaning, challenge, reward, punishment. Relevance of these variables or constructs to the current school or work environments.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), HLST (single) and NEUR (single) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 2F35.

### PSYC 3P33

#### **Psychology of intergroup behavior** (also offered as COMM 3P33)

Social psychological theories and re-

search in the area of intergroup relations and intergroup conflict. Topics include: realistic conflict theory, social identity theory, social exchange, relative deprivation, elite theory and research on intergroup perceptions and attitudes. For each topic current issues/controversies will also be examined as well as implications for the resolution of intergroup conflict.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and COMM (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 1F90.

### PSYC 3P35

#### **Emotion**

Emotion as a source of motivation and adaptation. Levels of analysis include experiential, behavioral and physiological. Simple (joy, surprise, interest, anger, fear, etc.) and complex (love, anxiety, etc.) emotions will be discussed. Universal characteristics and cultural variations will be explored.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and HLST (single) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 4P20.

### PSYC 3P39

#### **Intermediate statistics**

Complex analysis of variance designs, including three or more independent variables. Special tests following ANOVAs are considered in detail. Special case designs and repeated measures, including violations of assumptions. An introduction to multivariate designs. Optional topics allow students to study their particular research designs.

*Lectures, seminar/tutorial, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 2F23.

### PSYC 3P41

#### **Computer data analysis**

A hands-on introduction to computer packages for analysing psychological data. The theory of advanced techniques will be explained in lectures and packages such as SPSS will be used in labs.

*Lectures, 2 hours per week; lab, 2 hours per week.*

Restriction: Open only to PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 3P39.

### PSYC 3P48

#### **Directed readings I**

A readings course on a topic not included in the regular course offerings of the department. Topic and readings to be chosen in consultation with a faculty member who is willing to supervise the student.

Restriction: Consult the department regarding permission to register. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 3F49.

### PSYC 3P49

#### **Directed readings II**

A readings course on a topic not included in the regular course offerings of the department. Topic and readings to be chosen in consultation with a faculty member who is willing to supervise the student.

Restriction: Consult the department regarding permission to register. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 3F49.

### PSYC 3P54

#### **Psychology of Western consciousness**

Attention, memory, hemispheric laterality and language are examined from a general systems theory perspective. Topics include: altered states of consciousness, lucid dreams, self-concepts and the effects of stress on consciousness. Western approaches to consciousness are contrasted and integrated

with American Indian shamanistic techniques for altering consciousness.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 3F55.

#### PSYC 3P55

##### **Psychology of Eastern consciousness**

Asian psychology is approached from a Buddhist perspective and includes the history and evolution of Buddhism, as it migrated from India to China, Japan and Tibet. Topics include: meditation, Taoism, Zen Buddhism, Sufism and Western applications such as biofeedback and therapy. Eastern approaches to consciousness are contrasted and integrated with Western psychology by examining attention, memory and language.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 3P54.

Credit will not be granted to students who have prior credit in PSYC 3F55.

#### PSYC 3P56

##### **Maturation and development** (also offered as CHST 3P56)

The influences of brain physiology and maturation on psychological development and vice versa; the role of heredity in understanding human development.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined), NEUR (single) and BA/BED majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Note: Enrolment limited to 65 students per section.

#### PSYC 3P60

##### **Conflict and development** (also offered as CHST 3P60)

An overview of the role of conflict in

early human development, including the causes, types and phases of conflicts. Particular attention will be focussed on cognitive and social strategies used to resolve conflicts. Students' participation in labs and research projects will permit a detailed analysis of the positive as well as negative outcome of conflicts.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined) and BA/BEd majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits.

Prerequisite: PSYC 2F12 or CHST 2F10 or consult the instructor for permission to register.

Note: Enrolment limited to 65 students per section.

#### PSYC 3P68

##### **Sleep and wakefulness**

The functions, mechanisms, rhythms, physiology and psychology of sleep will be contrasted with counterparts during wakefulness. Current issues in sleep and dream research will be raised in lecture/seminar and labs. Experimentation encouraged.

*Lectures/seminar 2 hours; lab, 2 hours per week.*

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Note: Enrolment limited to 24 students per section.

#### PSYC 3P73

##### **The psychology of reading** (also offered as CHST 3P73)

Psychological processes involved in beginning and skilled reading. Current theories of reading will be presented and evaluated in the light of current research findings. Theories of reading disability and prospects for remediation will also briefly be considered.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined) and BA/BEd majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisites: PSYC 1F90 and one of PSYC 2F23, 2F24 or MATH 1F92 (may

be taken concurrently).

Recommended background: PSYC 2F20 or 3F08 or 3P11.

Note: Enrolment limited to 65 students per section.

Credit will not be granted to students who have prior credit in PSYC(CHST) 3P88.

#### PSYC 3P74

##### **Psychology of computers in education** (also offered as CHST 3P74)

Current and potential uses of computers in education will be carried out in light of current theories of child development. The emphasis is on putting the use of computers in education on firm theoretical and empirical footing.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined) and BA/BEd majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 1F90 and one of PSYC 2F23, 2F24 or MATH 1F92 (may be taken concurrently).

Recommended background: PSYC 2F20 or 3F08 or 3P11.

Note: This is not a computer programming course. Enrolment limited to 65 students per section.

Credit will not be granted to students who have prior credit in PSYC(CHST) 3P89.

#### PSYC 3P75

##### **Introduction to human factors** (also offered as COSC 3P75)

The effect of machines on individuals and groups. Key questions include: How does the design of a machine affect the quality of life of the machine user? How does automation affect group interaction? The physical, mental and sensory characteristics of human beings with an emphasis on how these characteristics should influence the design of machines and systems. Does not involve any computer programming.

*Lectures, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and COSC (single or combined) majors with a minimum of 10.0 overall credits.

#### PSYC 3P80

##### **Psychology of interpersonal behavior** (also offered as COMM 3P80)



## Psychology

The social psychology of interpersonal attraction and relationships, as studied through experimental, correlational and longitudinal designs. Reinforcement, exchange, attributional, equity and balance models. Levels of relationships. Aspects of the maintenance and dissolution of relationships and of interpersonal psychopathology.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and COMM (single or combined) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 2F30 recommended. Credit will not be granted to students who have prior credit in PSYC 396.

### PSYC 3P82

#### Psychology of the arts

(also offered as FAPA 3P82)

Psychological responses to art. Topics include: color, form, motion, rhythm, space and their relationships; proportion and balance; empathy and aesthetic distance; abstraction and symbols. The relation of aesthetic behavior to other aspects of psychological functioning will also be considered.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), COMM (single or combined) and CCST (single) majors until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

### PSYC 3P90

#### Psychogerontology

Focus will be on the debilitating conditions that occur in old age and the implications these have for personal coping and for the care of the unwell elderly. Topics may include: dementia and other physiological factors that affect cognitive and personality functioning, personal and community support systems, institutionalization and palliative care.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), HLST (single) and NEUR (single) majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits

above PSYC 1F90.

Prerequisite: PSYC 3P94 or permission of the instructor.

### PSYC 3P92

#### Drugs and behavior

Basic principles of drug action and the effects of psychoactive drugs on behavior and experience. Focus on recreational drugs and the use of drugs in psychiatry.

*Lectures, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), HLST (single) and NEUR (single) majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 299 or 3F92.

### PSYC 3P93

#### Infant development

The development of infants from the prenatal period through the second year of life. Major topics will be perception, cognition, attachment and social development. Additional topics of special interest, including at-risk infants and infant intervention programs.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined) and BA/BEEd majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 2F12 or CHST 2F10 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in PSYC 3P16.

### PSYC 3P94

#### The psychology of aging

Focus will be on theories and methods of life-span development as they apply to the special issues that emerge during late adulthood; how physiological, social and cognitive factors interact as individuals cope with the tasks of later years.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined), HLST (single) and NEUR (single) majors with a major average of 68

percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

### PSYC 3P95

#### Stress

Examination of stress in terms of occupations, environments, life events; methods of appraisal, ways of coping and consequences for health. Stress is viewed from all three current approaches: stimulus, process, response. Cognitive, emotional and behavioral factors are explored.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and HLST (single) majors with an average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Credit will not be granted to students who have prior credit in PSYC 3F95 or 350.

### PSYC 3P98

#### Neuropsychology I

The principles of brain-behavior relations as they relate to clinical neuropsychological syndromes. Topics include: disorders of language, attention, spatial skills and memory; other selected issues such as closed head injury, epilepsy and developmental disorders.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), HLST (single) and NEUR (single) majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

### PSYC 3P99

#### Neuropsychology II

The principles of brain-behavior relations as they relate to cognitive neuroscience; empirical issues in the study of higher cortical functions and dysfunctions.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), HLST (single) and NEUR (single) majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 3P98 or permission of the instructor.

**PSYC 3Q90****The nature of consciousness**  
(also offered as PHIL 3Q90)

A review of competing understandings of human consciousness, ranging from phenomenology to neural and computational models. Special attention will be given to research and theory on imagery and metaphor. A central historical component will trace the development of approaches to consciousness as a dynamic synthesis of the senses (*sensus communis*, sixth sense) from Aristotle, through the Romantic tradition of philosophy and aesthetics, the "unconscious" of Freud, Jung, Hillman and Gendlin and into current research on synesthesia and related states of consciousness.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and PHIL (single or combined) majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 1F90.

**PSYC 3Q94****Advanced topics in social development**

(also offered as CHST 3Q94)

Social competence, aggression, friendship and other topics in social development will be examined from a variety of developmental perspectives. Methodological and training issues relevant to the study of social development will also be examined.

Enrolment limited to 35 students per section.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined) and BA/BEEd majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 2F12 or 3P17 or CHST 2F10 or consult the instructor for permission to register.

Credit will not be granted to students who have prior credit in PSYC(CHST) 3P84.

**PSYC 3Q95****Theories of personality: Freud and Jung**

(also offered as PHIL 3Q95)

Major clinically derived theories of personality with special attention to their bases in case study/life history methodology. The focus will be on Freud and Jung and their continuing relevance for current personality, developmental and transpersonal psychology. The possibly unique relation of "depth psychology" to numinous experience (mysticism, creativity, psychosis) will be studied through selected life histories.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and PHIL (single or combined) majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 1F90.

Credit will not be granted to students with prior credit in PSYC 3P85.

**PSYC 3Q96****Theories of personality: developments in psychodynamic and transpersonal psychology**

(also offered as PHIL 3Q96)

Major developments in the psychoanalytic tradition (Kohut, Winnicott, Klein) as they relate to analogous developments within transpersonal and Jungian approaches to "higher" states of consciousness. The conflicts and congruences between these perspectives will be illustrated by selected life histories (e.g., Melanie Klein, Wilhelm Reich, G. Gurdjieff).

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and PHIL (single or combined) majors with a major average of 68 percent until date specified in BIRT guide. Students must have a minimum of 8.0 overall credits or 3.0 PSYC credits above PSYC 1F90.

Prerequisite: PSYC 1F90.

Credit will not be granted to students with prior credit in PSYC 3P86.

**PSYC 4F11****Applications and theories of human development**

Integration of classical and contemporary theories of human development, focussing on the connection between theory and application, including analysis of social policies and practice.

*Seminars, 3 hours per week.*

Restriction: Open only to PSYC (single or combined), CHST (single or combined) majors with approval to year 4 and to BA/BEEd majors.

**PSYC 4F50****Introduction to clinical psychology**

Issues in assessment techniques, major theories of psychotherapy and research findings concerning treatment strategies for specific disorders.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and HLST (single) majors with approval to year 4.

**PSYC 4F91****Thesis tutorial**

A research project carried out with a faculty adviser whose permission must be obtained prior to registration.

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with approval to year 4. Consult the department regarding permission to register.

*Note:*

*Topics discussed each year in PSYC 4P04, 4P05, 4P06, 4P07, 4P08 and 4P09 will vary.*

**PSYC 4P04****Directed study in personality, social and developmental psychology I**

Analysis of special problems such as behavior change, social attitudes, social communication, etc. Directed study or seminar; to be arranged in advance with appropriate faculty before registration.

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with approval to year 4. Consult the department regarding permission to register.

Credit will not be granted to students who have prior credit in PSYC 4F01.

## Psychology

### PSYC 4P05

#### **Directed study in personality, social and developmental psychology II**

Analysis of special problems such as behavior change, social attitudes, social communication, etc. Directed study or seminar; to be arranged in advance with appropriate faculty before registration. Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with approval to year 4. Consult the department regarding permission to register.

Credit will not be granted to students who have prior credit in PSYC 4F01.

### PSYC 4P06

#### **Directed study in comparative and physiological psychology I**

How some brain functions relate to behavior and subjective experience. Directed study or seminar, to be arranged in advance with appropriate faculty before registration.

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with approval to year 4. Consult the department regarding permission to register.

Credit will not be granted to students who have prior credit in PSYC 4F02.

### PSYC 4P07

#### **Directed study in comparative and physiological psychology II**

How some brain functions relate to behavior and subjective experience. Directed study or seminar, to be arranged in advance with appropriate faculty before registration.

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with approval to year 4. Consult the department regarding permission to register.

Credit will not be granted to students who have prior credit in PSYC 4F02.

### PSYC 4P08

#### **Directed study in learning, thinking, cognition and consciousness I**

Special topics in these areas will be discussed each year. Directed study or seminar; to be arranged in advance with appropriate faculty.

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with approval to year 4. Consult the

department regarding permission to register.

Credit will not be granted to students who have prior credit in PSYC 4F03.

### PSYC 4P09

#### **Directed study in learning, thinking, cognition and consciousness II**

Special topics in these areas will be discussed each year. Directed study or seminar; to be arranged in advance with appropriate faculty.

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with approval to year 4. Consult the department regarding permission to register.

Credit will not be granted to students who have prior credit in PSYC 4F03.

### PSYC 4P21

#### **Psychology of addictive behavior**

Theory and research on substance use. Focus on psychopharmacological, cognitive, psychodynamic and social psychological models and on longitudinal research. Implications for treatment and prevention.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and HLST (single) majors with approval to year 4.

Prerequisite: PSYC 3P92.

### PSYC 4P22

#### **Advanced seminar in human memory**

Historic and current ideas about memory and the implications these have for our approach to memory in research, in medical and in legal contexts. Topics to be covered include hypnosis and memory, eyewitness testimony, varieties of memory disorders and the question of rehabilitation. Students will be introduced to various clinical and experimental tools used in the assessment of memory.

*Lectures, seminar, 3 hours per week*

Restriction: Open only to PSYC (single or combined) majors with approval to year 4.

Note: Background in normal developmental processes is strongly recommended; e.g., PSYC 2F12, 2F20, 3P17, PSYC (CHST)3P11, CHST 2F10.

### PSYC 4P31

#### **Treatment alternatives for children and adolescents: dynamic therapies** (also offered as CHST 4P31)

The theoretical background, research and evaluation of current therapeutic approaches to emotionally and behaviorally disturbed children and adolescents. All students will participate in a practicum placement. Major topics: a) play therapies, including non-directive, expressive and Gestalt approaches; b) group methods, including use of modeling, goal setting and evaluation methods.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and CHST (single or combined) majors with approval to year 4 and BA/BEEd majors.

Prerequisite: PSYC 2F12 or CHST 2F10. Note: Enrolment limited to 12 students per section.

### PSYC 4P32

#### **Treatment alternatives for children and adolescents: cognitive and behavioral approaches** (also offered as CHST 4P32)

Behavioral theory and techniques will be presented. Social skills training, cognitive theories, contingency management and relaxation will be included in this section. All students will participate in a practicum placement.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and CHST (single or combined) majors with approval to year 4 and BA/BEEd majors.

Prerequisite: PSYC 2F12 or CHST 2F10. Note: Enrolment limited to 12 students per section.

### PSYC 4P41

#### **Parent-child relations**

The origins and developmental course of adaptive and nonadaptive parent-child relationships. Parental beliefs and the socialization of social and cognitive skills will be analysed in a seminar format. Strategies for assessing parent-child interactions and measuring the nature of relationships.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single

or combined), CHST (single or combined) and BA/BEEd majors with approval to year 4.

Prerequisite: PSYC 2F12 or CHST 2F10.

#### PSYC 4P44

##### **The social psychology of justice**

An introduction to social psychological research and theories, including equity theory and relative deprivation, in relation to the concept of justice. The application of social psychology to the legal system will also be explored, especially with regard to eyewitness testimony, jury decision making and dispute resolution.

*Lecture, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) majors with approval to year 4.

#### PSYC 4P45

##### **Community psychology**

Community psychology as conceptualized in the past 20 years. Emphasis on the interplay between community psychology, deinstitutionalization and the community mental health movements. The contemporary drive for consumer involvement in the development and provision of service will be a major perspective.

*Lectures, seminar, 3 hours per week, plus field work.*

Restriction: Open only to PSYC (single or combined) and HLST (single) majors with approval to year 4.

Note: Enrolment limited to 15 students per section.

#### PSYC 4P92

##### **History of psychology**

The historical development of different orientations to psychology. Topics include: philosophical and physiological influences in psychology; introspectionism; functionalism; behaviorism; Gestalt theory; psychoanalysis.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with approval to year 4.

#### PSYC 4P93

##### **Honors seminar**

A comprehensive look at the fundamental issues in the various areas of psychology, with various faculty members re-

sponsible for specific areas.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with approval to year 4.

Prerequisite: PSYC 4P92.

Credit will not be granted to students who have prior credit in PSYC 490.

#### PSYC 4P94

##### **Thesis seminar**

A seminar in which thesis students will undertake a detailed study of current research in various areas of psychology.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and NEUR (single) majors with approval to year 4.

Co-requisite: PSYC 4F91.

# Recreation and Leisure Studies

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## Officers of instruction

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### Chair

Ann Marie Guilmette

### Professor

David Ng

### Associate professors

Ann Marie Guilmette

Peggy Hutchison

John K. Larsen

George S. Nogradi

Simon Priest

### Assistant professors

Michael Kanters

Laurel Reid

John K. Yardley

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## General information

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### *Physical Education and Recreation Centre 213*

This course of study is designed to meet the growing need for people to administer and develop programs in recreation and leisure.

Students who are admitted to the program in the Spring of 1993 or after will be required to take a foundations course, followed by introductory courses in recreation for special populations, outdoor adventure recreation, recreation administration, tourism, leisure studies and research.

Students who are already enrolled in the program or who were admitted to the program prior to the Spring of 1993 are required to take introductory courses in recreation program planning, recreation for special populations, outdoor adventure recreation, recreation administration and leisure studies.

All students must complete at least one

credit from each of the three context requirements: humanities, social sciences, sciences (see page 33). In addition to required courses, students must choose at least two credits in RECL and four credits outside of RECL (excluding context credits). Creative individual and group leisure service planning and administration will be emphasized in course work and the third-year field placement course.

Upon completion of all requirements, graduating students will be awarded the degree, Bachelor of Recreation and Leisure Studies (BRLS).

### Challenge for credit

In conjunction with page 38 of the Brock University calendar and in preparation for the approval of a challenge, students shall: a) prepare a written rationale for the challenge request; b) include the background, experience and/or knowledge which warrants the challenge; and c) prepare a resume which identifies the length of time and duties assigned for any work experience.

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## Honors program

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*Honors program: For students who are admitted to the program in the Spring of 1993 or after.*

### Year 1

RECL 1F91; one social science context credit; one science or humanities context credit; COSC 1P90 or 1P98; one and one-half elective credits (see Notes 1, 2 and 3).

### Year 2

RECL 2P07, 2P11; one credit from RECL 2P02, 2P06, 2P08, 2P10; one RECL elective credit; one science or humanities context credit (whichever was not taken in Year 1); one elective credit.

### Year 3

RECL 3P01; one credit from RECL 2P02, 2P06, 2P08, 2P10 (whichever were not taken in Year 2); one-half RECL elective credit; three elective credits (see Notes 4, 5 and 6).

### Year 4

RECL 4F01, 4F07; and one of RECL 4F04, 4F05; two elective credits (chosen in consultation with department adviser). In addition to honors standing and RECL 3P07 or 3P17, a Faculty review is required for admission to year 4 of the honors BRLS program.

### Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

### Notes:

1. In accordance with page 32 of the Undergraduate calendar, a grade of C in RECL 1F91 is required to continue as a major in Recreation and Leisure Studies. Those students who do not achieve at least a C grade in RECL 1F91 will be restricted to two half credit electives in Recreation and Leisure Studies until the course is repeated and the mandatory C grade is achieved.

2. Students may choose to wait and complete COSC 1P90 or 1P98 as an elective half-credit in Year 2.

3. Students who opt to complete COSC 1P90 or 1P98 in year 2 must complete two elective credits in year 1.

4. RECL 3P07 or 3P17 must be taken for year 4 admission.

5. RECL courses may be taken as electives but at least four elective credits (excluding context credits) must be taken outside of the department of Recreation and Leisure Studies.

6. If RECL 2P02, 2P06, 2P08 and 2P10 are all taken in year 2, students must substitute one RECL elective credit in year 3.

*Honors program: For students who are admitted to the program earlier than Spring 1993.*

### Year 1

RECL 1P00, 1P02, 1P06, 1P10; one social science context credit; one science or humanities context credit; one elective credit (see Note 1.)

**Year 2**

RECL 2P01, 2P07; one RECL elective credit; one science or humanities context credit (whichever was not taken in year one); COSC 1P90 or 1P98; one and one-half elective credits.

**Year 3**

RECL 3P01, 3P05; one RECL elective credit; three elective credits. (See Notes 2 and 3.)

**Year 4**

RECL 4F01, 4F07; and one of 4F04 or 4F05; two elective credits (chosen in consultation with departmental adviser). In addition to honors standing and RECL 3P07 or 3P17, a Faculty review is required for admission to year 4 of the honors BRLS program.

**Pass program**

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Notes:**

1. In accordance with page 32 of the Undergraduate calendar, a grade of C in each of RECL 1P00, 1P02, 1P06, 1P10 is required to continue as a major in Recreation and Leisure Studies. Those students who do not achieve at least a C grade in each of these classes will be restricted to two half credit electives (courses at the 3(alpha)00 level) in RECL until the course is repeated and the mandatory C grade is achieved.

2. RECL courses may be taken as electives but at least four elective credits (excluding context credits) must be taken outside of the Department of Recreation and Leisure Studies.

3. RECL 3P07 or 3P17 must be taken for year 4 admission.

**Executive management/degree completion program**

Students in this program can take a maximum of four one-half credit courses (2 credits) that are designated executive management courses.

Students who have completed thirteen

credits, at least five of which must be Brock credits (see page 31 of the calendar) and who are eligible for recertification with Parks and Recreation Federation of Ontario (PRFO), may challenge the remaining two RECL credits for a pass BRLS degree.

**Non-Recreation and Leisure Studies majors**

Students in other disciplines who wish to enrol in credit courses in Recreation and Leisure Studies may select from the following approved courses:

RECL 1F91, 1P00, 1P02, 1P06, 1P10, 2P01, 2P07, 2P26, 3P01, 3P02, 3P03, 3P04, 3P06, 3P07, 3P08, 3P09, 3P10, 3P11, 3P12, 3P13, 3P14, 3P16, 3P17, 3P18, 3P20, 3P21, 3P22 and 3P30.

It should be noted that there is a limit of five credits in Business and designated courses in Education, Physical Education and Recreation and Leisure Studies which may be included in a pass BA or BSc program.

**Career planning**

The BRLS degree program is designed to qualify graduates for a wide range of positions in the rapidly expanding field of leisure services: city recreation and parks departments; YM/YWCAs; community activity programs; leisure services for special populations (the aged, intellectually, physically, emotionally, socially and culturally disadvantaged); outdoor recreation programs and camps; company/employee recreation programs; and private clubs and resorts in the tourism/hospitality industry.

**Prerequisite and restrictions**

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

**Description of courses**

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

**Course numbering plan**

The last digit of the course number of all courses in Recreation and Leisure Studies indicates the subject matter, as follows:

0	=	administrative
1	=	leisure studies - theory
2	=	special populations
3	=	undesignated elective
4	=	undesignated elective
5	=	placements
6	=	outdoor adventure
7	=	research
8	=	tourism
9	=	undesignated elective

†RECL 3PXX - recreation elective course which may be cycled every two years.

**RECL 1F91  
Foundations for recreation and leisure studies**

Theoretical, historical, methodological and socio-cultural foundations for leisure concepts, studies, resources, services and practices. The principles of program planning and development within a community setting. Emphasis on factors influencing participation and planning considerations.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to students admitted to RECL until date specified in BIRT guide.

Credit will not be granted to students with prior credit in RECL 1P00, 1P02, 1P06 or 1P10.

**RECL 1P00  
Introduction to recreation program planning**

The principles of recreation program planning and development within a com-

## Recreation and Leisure Studies

munity setting. Emphasis is placed on the factors influencing participation and on planning considerations such as analysis of needs, program construction and design, implementation and evaluation.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to students admitted to RECL and to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Credit will not be granted for both RECL 1F91 and 1P00.

### RECL 1P02

#### **Introduction to recreation for special populations**

The nature and needs of special populations (e.g., older adults, people with intellectual and physical disabilities). Emphasis will be placed on understanding the normalization process and on the physiological and psychological characteristics of special populations.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to students admitted to RECL and to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Note: In 1994-95, RECL 1P02 will become RECL 2P02.

Credit will not be granted for both RECL 1F91 and 1P02.

### RECL 1P06

#### **Introduction to outdoor adventure recreation**

The use of the outdoor environment as a recreation setting; an exploration of the broad scope of activities, practices and concepts important to the outdoor adventure recreation practitioner. Experiences include: service learning, team building experiences and rope courses.

*Lectures, seminar, 3 hours per week, plus field experience.*

Restriction: Open only to students admitted to RECL and to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Note: In 1994-95, RECL 1P06 will become RECL 2P06. Field experience fee will be charged; consult department.

Credit will not be granted for both RECL 1F91 and 1P06.

### RECL 1P10

#### **Introduction to recreation administration**

The fundamental principles of administration applied to the organization and operation of a recreation agency. The need for developing goals and objectives and the criteria for evaluation in both the public and private sector.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to students admitted to RECL and to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Note: In 1994-95, RECL 1P10 will become RECL 2P10.

Credit will not be granted for both RECL 1F91 and 1P10.

### RECL 2P01

#### **Introduction to leisure studies**

Leisure concepts and the emerging discipline of leisure studies are introduced in theoretical, historical, methodological and socio-cultural contexts.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: one credit in RECL.

Credit will not be granted to students who have prior credit in RECL 1F91.

### RECL 2P07

#### **Introduction to research designs and evaluation**

(also offered as HLST 2P07)

Principles and techniques for research in recreation and leisure studies/health studies with particular emphasis on issues in the construction, administration and evaluation of data collection as well as the processing and analysis of data.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to RECL (single) and HLST (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: one credit in RECL.

Credit will not be granted to students with prior credit in HLST 2F10.

### RECL 2P26

#### **Safety procedures and practices: outdoor adventure recreation programs**

North American safety guidelines and standards. Field experience: accident

response, search and rescue, evacuation and navigation labs.

*Lectures, lab, 4 hours per week, plus field experience.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: RECL 1P06.

Note: Field experience fee will be charged; consult department.

### RECL 3P01

#### **Issues in leisure and lifestyles**

Classical, modern and contemporary concepts of play, recreation and leisure are reviewed and analysed. Research strategies, lifestyle implications and models for interpreting leisure and lifestyles are explored.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisites: RECL 2P01, 2P07.

Credit will not be granted to students who have prior credit in RECL 2P91.

### RECL 3P02

#### **Recreation issues in special populations**

A review of the more critical issues in recreation for special populations. Current trends and future social alternatives; facilitation of change by government and various agencies; new roles for recreationists, volunteers and consumers.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisites: RECL 1P00, 1P02.

### RECL 3P03

#### **Introduction to recreation services**

The delivery of recreation services with particular emphasis on contemporary Canadian society.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: one credit in RECL.

Credit will not be granted to students who have prior credit in RECL 1F91.

RECL 3P04

**Leisure lifestyle assessment**

The physical, psychological and social factors that impact on leisure lifestyle choices.

*Lectures, 3 hours per week.*

Restriction: Open only to RECL (single) and HLST (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: one credit in RECL.

Credit will not be granted to students who have prior credit in RECL 2P94.

RECL 3P05

**Leisure services fieldwork**

Practical experiences in specific leisure service agencies. In addition to course work in leadership, programming and community resource development, students will be placed in an existing community recreation setting.

*Seminars, 3 hours per week, plus fieldwork.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent and a minimum 9.5 overall credits.

RECL 3P06

**Outdoor adventure recreation program management**

Risk management and organizational skills necessary to plan, execute and evaluate safe and environmentally sound outdoor adventure recreation programs. Field experience is typically a four- or five-day canoe trip.

*Lectures, lab, 4 hours per week, plus field experience.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide. Prerequisite: RECL 2P26.

Note: Field experience fee will be charged; consult department.

Credit will not be granted to students who have prior credit in RECL 3F06.

RECL 3P07

**Quantitative methods of inquiry**  
(also offered as HLST 3P07)

Quantitative means to understand, evaluate and interpret statistical information.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to RECL (single) majors and HLST (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: RECL(HLST) 2P07.

RECL 3P08

**Introduction to tourism**

Socio-cultural, environmental and economic impacts of tourism. Interdisciplinary in emphasis, with elements drawn from recreation, sociology, psychology, geography, economics and business.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: one credit in RECL.

Note: In 1994-95 RECL 3P08 will become RECL 2P08.

Credit will not be granted to students who have prior credit in RECL 3V99.

RECL 3P09

**Commercial leisure services**

The development and role of commercial leisure services in Canadian society. An overview of the concepts, principles and practices for developing a commercial recreation business.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisites: RECL 1P00, 1P10.

RECL 3P10

**Management of human resources in recreation and leisure service organizations**

Analysis of administrative philosophy and practice in relation to success of delivery and facilitation of services: performance and productivity, work activities, employee recruitment, resource acquisition and financial management.

*Lectures, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide. Prerequisite: RECL 1P10.

Credit will not be granted to students with prior credit in RECL 3V80.

†RECL 3P11

**The social psychology of leisure and recreation**

The social psychological dimensions of human behavior during free time including an examination of lifestyle, social habits and motives for leisure and recreation.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide. Prerequisite: RECL 2P01.

Note: In 1994-95, RECL 3P11 will become RECL 2P11.

Credit will not be granted to students who have prior credit in RECL 2P11.

RECL 3P12

**Leisure and aging**

The philosophy and role of leisure throughout life and the development of strategies for education, planning and counselling.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisites: RECL 1P02, 1P10.

†RECL 3P13

**Play and culture**

Play in socio-cultural contexts; children's play and playgrounds; games and gaming; word play (storytelling, drama, humor); adult play and leisure; festivals and celebrations.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: one credit in RECL.

Credit will not be granted to students who have prior credit in RECL 3V98.

RECL 3P14

**Interpersonal communication in recreation**

(also offered as COMM 3P14)

The interpersonal qualities, abilities and insights that play an important role in facilitating a recreation experience. Special emphasis placed on self-concept, perception/values, language, non-verbal communication, listening, disclosure, relationships and resolving conflicts in the recreation setting.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to RECL (single) and COMM (single or combined) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: one credit in RECL.

Credit will not be granted to students who have prior credit in COMM 2P55, 3P94, SOCI 2P55 or RECL 3P94.



## Recreation and Leisure Studies

RECL 3P16

### **Outdoor adventure recreation leadership**

Group management and instructional skills necessary to leadership in outdoor adventure recreation experiences. Problem solving, decision making and the use of sound judgement. Field experience is typically a four- or five-day winter trip. *Lectures, lab, 4 hours per week, plus field experience.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide. Prerequisite: RECL 2P26.

Note: Field experience fee will be charged; consult department. Credit will not be granted to students who have prior credit in RECL 3F06.

RECL 3P17

### **Qualitative approaches to inquiry** (also offered as HLST 3P17)

Theories, approaches, designs, methods and procedures for conducting evaluative analyses.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to RECL (single) and HLST (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: RECL 2P07 or HLST 2P07.

RECL 3P18

### **Tourism planning and development**

Economic, environmental and social significance of various markets, services and transportation systems; consideration of regional, provincial and national developments.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide. Prerequisite: RECL 3P08.

Credit will not be granted to students with prior credit in RECL 3V58.

RECL 3P20

### **Administrative practices in recreation and leisure service organizations**

Management issues relating to individuals and groups in organizations: problem solving, conflict resolution; motivation, job design and enrichment; performance reviews; problem employees.

*Lectures, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide. Prerequisite: RECL 1P10 and one other RECL credit.

RECL 3P21

### **Community development in recreation**

Various theoretical perspectives on community organization and development, as well as methods available to the recreation practitioner to facilitate the development of recreation services in communities.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide. Prerequisites: RECL 1P00, 1P10.

Credit will not be granted to students with prior credit in RECL 3P00.

†RECL 3P22

### **Leisure awareness and education**

Leisure education topics include: tools/techniques and strategies for leisure counselling, assessment and evaluation. Creating awareness with special populations is emphasized.

*Lectures, lab, 3 hours per week.*

Restriction: Open only to RECL (single) majors with a major average of 60 percent until date specified in BIRT guide. Prerequisites: RECL 1P02 and one other RECL credit.

Credit will not be granted to students who have prior credit in RECL 3V92.

RECL 3P30

### **Employee wellness programs**

Employee recreation, fitness, assistance and service programs and their impact in the workplace.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) and HLST (single) majors with a major average of 60 percent until date specified in BIRT guide.

Prerequisite: RECL 1P00, 1P10.

Credit will not be granted to students with prior credit in RECL 3P99.

RECL 3V50-3V99

### **Special studies in recreation and leisure**

A series of lectures, seminars and practical experiences offered in specialized areas of recreation and leisure.

Restriction: Open only to RECL (single) majors with a major average of 70 percent and a non-major average of 60 percent. Consult the department regarding permission to register.

RECL 4F01

### **Contemporary issues in leisure studies**

Significant historical, contemporary and future issues and concerns in recreation and leisure studies. Emphasis on creative lifestyle development and change at all ages.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with approval to year 4.

RECL 4F04

### **Leisure and lifestyle benefits**

Personal, social, economic and environmental benefits of incorporating leisure into lifestyle changes.

*Seminars, 3 hours per week.*

Restriction: Open only to RECL (single) majors with approval to year 4.

RECL 4F05

### **Fieldwork project**

A program of practical experience in which students are placed in community recreation agencies which may be government funded or privately owned. In this placement, students are responsible for a project of master planning or rehabilitative change in recreation behavior or needs assessment.

*Seminars, 3 hours per week, plus fieldwork.*

Restriction: Open only to RECL (single) majors with approval to year 4.

RECL 4F07

### **Research project**

Development of appropriate and relevant research designs in recreation and leisure studies. Students will propose a research problem, review the literature, discuss methodology, collect and analyse the data, discuss the results and make a formal presentation of their research project.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to RECL (single) majors with approval to year 4.

RECL 4P97

**Honors project**

Students may engage in further work on their research project in consultation with a faculty advisor. A number of options are available to the student including: a formal honors project, a research journal manuscript or a presentation for a research symposium or professional conference.

*Seminars, 3 hours per week.*

Restriction: Open only to RECL (single) majors with approval to year 4.

Prerequisite: RECL 4F07 (may be taken concurrently).

# Science

## Director

S. Rothstein, Chemistry

## General information

### Mackenzie Chown E206

Science courses (SCIE) are special offerings from the Faculty of Mathematics and Science which provide an overview of scientific endeavor, rather than concentrating on any single discipline. These courses treat the growth of theory and practice in the context of historical development and social issues.

The following courses offered by the Faculty of Mathematics and Science are primarily designed for students not majoring in a science or combined science program.

- ASTR 1F00 Introduction to Astronomy (see Physics)
- BIOL 1F25 Biology - A human perspective
- BIOL 2F95 Bioethics
- BIOL 2P97 Human physiology
- ERSC 1F90 Geology and the environment
- ERSC 2P99 Dinosaurs and the history of life
- SCIE 1F30 Science and society (consult the Chemistry department for information)

## Prerequisite and restrictions

You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

## Description of courses

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

### SCIE 1F30

#### Science and society

Exploration of the impacts of science and technology on society, for the non-science student. Starting from a definition that science is the art of the "knowable" and technology is the art of the "doable", topics will include: What is pollution?; How are scientific theories formulated?; Science, ethics and public policy. Invited speakers will provide the bases for seminar discussions. *Lectures, 3 hours per week, seminar, 1 hour, alternate weeks.*

### SCIE 3P91

#### Science at the junior/intermediate level

Designed for students in the concurrent science and education program, this course will explore science instruction and curriculum at the junior and intermediate level (grades 4-10) from the viewpoint of student participation in experiments, observations and demonstrations. Materials, exercises and other required resources for doing "hands-on" teaching in the schools will be surveyed. A school based practicum is required.

*Lectures, seminar, practicum, 3 hours per week.*

Restriction: Open only to BSc/BEd majors with a minimum of 9.0 overall credits.

# Sociology

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## Officers of instruction

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### Chair

Judith C. Blackwell

### Professors

Susan M. Clark

Terrence H. White

### Associate professors

Judith C. Blackwell

Ann D. Duffy

Daniel G. Glenday

Deborah A. Harrison

Victor A. Tomovich

Walter Watson

### Assistant professors

June Corman

Lloyd G. Ward

### Part-time instructor

Deborah Boutilier

## General information

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### Mackenzie Chown, A332

The disciplines encompassed by the Department of Sociology--social anthropology, social psychology and sociology--are concerned broadly with social processes and structure and with behavior conditioned by participation in such contexts. The department at Brock is committed to a conception of the social sciences as scientific disciplines and to the belief that sound social action projects should be based on rigorous scientific effort. The department is also committed, however, to the view that social analysis is a complex process and that no one discipline can provide a complete perspective.

Business, government organized labor and voluntary associations increasingly require an understanding of group behavior. Sociology in Canada has made significant contributions to our knowledge of elites and the class structure, the tensions between Québec and the rest of

the country, gender relations, ethnic and sex segregation in the work force, crime and delinquency, regional underdevelopment, equality of opportunity and Canada's role in the Third World. Sociological input has been invited and contributed to the Royal Commission on Bilingualism and Biculturalism, the Task Force on Canadian Unity, the Commission on the Non-medical Use of Drugs, etc. Public policy in the areas of education, crime and delinquency, official languages and regionalism have all benefitted from sociological analysis. Undergraduate training in Sociology provides students with a broad and scientific approach to society that both enhances understanding of social issues and provides a valuable basis for employment in human service industries.

Students declaring a major in Sociology can pursue one of four programs: an honors BA program, either in Sociology alone or as a combined major and a pass BA program, either single or combined. In addition to combined major programs in other academic departments, Sociology students may co-major in interdisciplinary programs such as Canadian Studies, Labor Studies, Urban and Environmental Studies or Women's Studies.

Students may be admitted to the BA honors or combined honors program at any time. The honors program provides students with the opportunity for a more intensive examination of issues in the field.

Students declaring a major in Sociology (pass, honors, single or combined) are responsible for ensuring that their programs satisfy the departmental requirements. To assist in this faculty advice is available on request.

### Honors programs

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#### With thesis or practicum:

The following courses are required: SOCI 1F90, 2F01, 2F10, 3F01, 3P11, 3P12, 4F01 and either 4F90 or 4F91. The student is required to take three addi-

tional credits in SOCI, including at least one credit at the 3(alpha)90 level or above.

#### Year 1

SOCI 1F90; one humanities and one science context credit; two elective credits.

#### Year 2

SOCI 2F01, 2F10; one SOCI credit; two elective credits.

#### Year 3

SOCI 3F01, 3P11, 3P12; one SOCI credit; two elective credits.

#### Year 4

SOCI 4F01 and either 4F90 or 4F91; one credit in SOCI numbered 3(alpha)90 or above; two elective credits.

#### With course work:

The following courses are required: SOCI 1F90, 2F10, 3F01, 3P11, 3P12, 4F10 and four additional credits in SOCI including at least two numbered 3(alpha)90 or above. (With prior permission of the chair of Sociology, courses in related disciplines numbered 3(alpha)90 or above may be considered for SOCI credit.)

#### Year 1

SOCI 1F90; one humanities and one science context credit; two elective credits.

#### Year 2

SOCI 2F01, 2F10; one SOCI credit; two elective credits.

#### Year 3

SOCI 3F01, 3P11, 3P12; one SOCI credit; two elective credits.

#### Year 4

SOCI 4F10; two credits in SOCI numbered 3(alpha)90 or above; two elective credits.

#### Pass program

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The following courses are required: SOCI 1F90, 2F01, 2F10, 3F01; three additional SOCI credits. For the latter,

## Sociology

courses given outside the department may be credited, provided that they are basic to an integrated program and written approval is obtained from the student's adviser and the department chair.

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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### Combined major program

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#### Honors program

All students taking a combined major honors degree in SOCI must complete three credits numbered 3(*alpha*)90 or above, at least two of which must be in SOCI. (With permission of the chair of Sociology, courses in related disciplines numbered 3(*alpha*)90 or above may be considered for SOCI credit.)

A student taking a combined major honors degree must complete 1F90, 2F01, 2F10, 3F01, 3P11, 3P12, one additional SOCI credit and one of the following options:

*Thesis/practicum:* SOCI 4F01 and either 4F90 or 4F91. Equivalent thesis or practicum work in the other discipline may be substituted for 4F90 or 4F91;

or

*Course work:* SOCI 4F10 and one credit in SOCI numbered 3(*alpha*)90 or above.

#### Pass program

A student taking a combined major pass program is required to complete five credits in SOCI. These will normally include: 1F90, 2F01, 2F10, 3F01 and one additional SOCI credit.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request

of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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**Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.**

#### *Note:*

SOCI 1F90 is a recommended prerequisite for all SOCI courses except where noted otherwise.

#### SOCI 1F90

##### **Introduction to sociology**

Principles and methods of social analysis as developed in sociology, social anthropology and social psychology, including elements of social structure, social relations, culture, norms and values, groups, stability and change, introduction to comparative analysis. Emphasis will be placed on field experience, independent student research and data analysis.

*Lectures, seminar, 3 hours per week.*

#### SOCI 2F01

##### **History of social thought**

The central ideas of the social sciences, their intellectual origin and their change over time. The works of major social philosophers from the 18th and 19th centuries as well as classical social theorists will be examined.

*Lectures, seminar, 3 hours per week.*

Prerequisite: SOCI 1F90; may be taken concurrently with SOCI 2F10.

Credit will not be granted to students who have prior credit in SOCI 200, 320 or 421.

#### SOCI 2F10

##### **Research methods in social relations** (also offered as COMM 2F10)

Introduction to the methods and procedures employed in social science research: research design and methods of data collections as well as the processing and analysis of data. Lectures emphasize the logic underlying research design and appropriate methods. Labs concentrate on data processing management and analysis.

*Lectures, lab, 3 hours per week.*

Prerequisite: SOCI 1F90 or COMM 1F90; may be taken concurrently with SOCI 2F01.

Credit will not be granted to students who have prior credit in SOCI 230, 231hc or 232hc.

#### SOCI 2F21

##### **The family**

(also offered as WISE 2F21)

Family patterns including gender roles and the dynamics of family change and development. Topics include: examination of marriage and family issues, gender role socialization and change, dual careers, alternative life styles, gender roles in cross-cultural perspective and marital and family relationships past, present and future.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI(WISE)3F21 or SOCI(WISE) 3P51.

#### SOCI 2F54

##### **Documentary film**

(also offered as COMM 2F54 and FILM 2F54)

Documentary film from its beginnings in photography and the *actualités* of the Lumières through traditions and developments in documentary practice. The history, theory and aesthetics of documentary film and its cultural implications.

*Lectures, seminar, 3 hours per week, plus weekly film lab.*

Prerequisite: SOCI 1F90, FILM 1F94 or permission of the instructor.

#### SOCI 2P22

##### **Education and society**

Social analysis of Canadian educational institutions emphasizing the influence of society on organizational structure, curriculum and goals: the relationship of education to other aspects of Canadian society.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 291hc.

#### SOCI 2P23

##### **Mass media**

(also offered as COMM 2P23)

The organization of the mass media, with

special emphasis on the Canadian media and their unique difficulties. Topics may include: the media's use for socialization, reproduction of the social structure and social change.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 248hc.

#### SOCI 2P32

##### **The sociology of work**

(also offered as LABR 2P32)

Understanding changes in the organization of work and the composition of the workforce with particular emphasis on the Niagara Peninsula. Topics include: unionization, management strategies, pay equity and employment equity, the international division of labor and other current issues in the Canadian labor movement. Those with work experience are encouraged to enrol.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 311hc.

Note: SOCI 1F90 is recommended for students registering in SOCI 2P32; LABR 1P90 is recommended for students registering in LABR 2P32.

#### SOCI 2P33

##### **Sociology of deviance**

An introduction to the concept of deviance and its role in contemporary societies. Particular emphasis on critical examinations of contemporary conceptions of deviance, sociological explanations of deviant behavior, non-criminal deviant activity and victimless crimes.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 292hc.

#### SOCI 2P34

##### **Sociology of trade unions**

(also offered as LABR 2P34)

Labor process theories which focus on the relationship between technology, the division of labor, social relations of production and the manner in which the state, business and trade unions have responded to changes in the labor process. Seminars will deal with practical problems of contemporary labor relations.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 3P32 or 351hc.

Note: SOCI 1F90 is recommended for students registering in SOCI 2P34; LABR 1F90 is recommended for students registering in LABR 2P34.

#### SOCI 2P41

##### **Urbanism and the community**

Communities in rural, urban and suburban settings will be studied with particular emphasis on the impact of industrialization and increased population complexity on community structure, identity, decision-making and the exercise of power.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 295hc, SOCI 371hc, SOCI 2P42.

#### SOCI 2P43

##### **Human ecology**

The impact of the physical and cultural environment on the spatial and social structure of human aggregates.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 372hc.

#### SOCI 2P52

##### **Socialization**

The development of shared meanings of symbols and commonly accepted forms of behavior. Sources of influence including parents, peers and television; studies of variations in patterns of socialization both within Canada and cross-nationally.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 266hc.

#### SOCI 2P55

##### **Interpersonal communication**

(also offered as COMM 2P55)

Perspectives on human communication including both verbal and non-verbal communication.

*Seminars, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 247hc.

#### SOCI 2P61

##### **Introduction to criminology**

An introduction to criminology as a scientific discipline. Historical development of the discipline, the major schools of criminology, the development of criminal laws. Topics may include methodological problems in the study of crime, victimization and selected types

of criminal activity.

*Lectures, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 293hc.

#### SOCI 2P62

##### **The criminal justice system**

A critical analysis of the administration and operation of the Canadian criminal justice system. This course will trace the flow of offenders through the system and discuss the roles of police, courts and corrections in processing offenders. The degree to which the administration of justice is an "interactive process". Identification of inequities in the Canadian criminal justice system.

*Lectures, seminar, 3 hours per week.*

#### SOCI 2P71

##### **Social class and social conflict**

Classical and contemporary approaches to the study of social class. Topics may include class relations and class conflict, elites, social mobility, poverty and social marginalization. Special attention will be given to the Canadian class structure through comparison with other industrialized nations.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 216hc, SOCI 217hc or SOCI 2P72.

#### SOCI 2P73

##### **Technology and development**

The political, social and cultural contexts of technological development. Particular emphasis will be placed on the impact of western technology in the Third World, industrialization, education, distribution of wealth and the development of the nation state.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 352hc, SOCI 213hc, SOCI(LABR) 3P76.

#### SOCI 2V80-2V89

##### **Selected topics in sociology**

Selected issues in sociology.

*Lectures, seminar, 3 hours per week.*

#### **1993-94: (2V82) Introduction to anthropology**

Social and cultural life from an anthropological perspective. Exploration of the scope and nature of the discipline

## Sociology

through the study of selected cases drawn largely from non-Western, technologically simple communities.

Prerequisite: second-year standing.

### 1993-94: (2V83) Social anthropology

Concepts, such as kinship and marriage and theories underlying the comparative study of the social institutions of non-literate peoples.

Prerequisite: SOCI 2V82.

### SOCI 2V90-2V99

#### Directed studies

Guided readings on a particular topic which is not covered in the department's regular course offerings. Topics must be chosen in consultation with a faculty member willing to supervise the tutorial. *Seminars, 3 hours per week.*

Prerequisite: permission of the instructor.

Note: Do not register until permission is obtained.

### SOCI 3F01

#### Modern social theory

Major contemporary theories of society, such as structural functionalism, symbolic interactionism and neo-Marxist and feminist theories. Consideration will be given to their origins and development in historical context. Theories will be compared and contrasted in terms of their assumptions, conceptual distinctions, methodological features and ethical implications.

*Lectures, seminar, 3 hours per week.*

Prerequisite: SOCI 2F01.

Credit will not be granted to students who have prior credit in SOCI 220 or 300.

### SOCI 3F33

#### Law and society

(also offered as WISE 3F33)

Sociological theories of law, feminist legal analysis, Canada's legal institutions and the Charter of Rights and Freedoms. Relationships between Canadian law and aboriginal peoples, the economy and the environment. Topics relevant to women and the law (e.g., family law, reproduction, violence against women and the sex trades) illustrate how the feminist critique of legal theory and practice presents challenges to the legal system.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 318hc or SOCI 3P33.

### SOCI 3P11

#### Qualitative research methods

Designed to develop skills necessary to pursue and understand qualitative analysis, particularly the introduction of basic concepts and the opportunity to become more familiar with qualitative research designs, including participant observation, interviews, historical analysis and descriptive and inductive strategies of analysis.

*Seminars, 3 hours per week.*

Prerequisite: SOCI 2F10 or permission of the instructor.

Credit will not be granted to students who have prior credit in SOCI 3F10.

### SOCI 3P12

#### Quantitative research methods

Research designs and associated data collection methods which produce social science data amenable to numeric coding and statistical analysis; the appropriate application of these methods, including their validity and reliability; the process of developing coding schemes and analysis designs.

*Lectures and seminars, 3 hours per week.*

Prerequisite: SOCI 2F10 or permission of the instructor.

Credit will not be granted to students who have prior credit in SOCI 3F10.

### SOCI 3P26

#### Medical sociology

Social factors associated with physical health, illness and impairments; health care delivery systems and the factors which influence their utilization.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 304hc.

### SOCI 3P27

#### Psychiatric sociology

Social factors associated with psychiatric illness. The course will emphasize the increased utilization of social science theory and research in the field of psychiatry.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 303hc

### SOCI 3P28

#### Introduction to clinical sociology

Application of sociological knowledge to intervention for individual and social change. The translation of symbolic interactionist and related theories into action will be emphasized. Units of analysis are groups or group settings rather than isolated individuals whose problems are considered intrapsychic.

*Seminars, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 305hc.

### SOCI 3P30

#### Sociology of women and work

(also offered as LABR 3P30 and WISE 3P30)

Both quantitative and qualitative research will explore the societal significance and implications of the change in women's participation in paid employment and domestic labor in this century. Attention will focus on specific areas: the ghettoization of the female labor force, women in professional and non-traditional occupations, microtechnology, part-time work and unionization.

*Lectures, seminar, 3 hours per week.*

### SOCI 3P31

#### Complex organizations

(also offered as LABR 3P31)

A critical overview of theories and research on the nature of complex organizations (e.g., the French Regulation School). Particular emphasis on the formal and informal aspects of organizational roles, how morale, motivation, work discipline and conflict are regulated and the feminist critiques of the traditional literature.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 345hc.

### SOCI 3P34

#### Information technology and work

(also offered as LABR 3P34)

The application of information technology to the labor process. Topics to be discussed include: the relationship of this technology to the number and types of jobs available, to the total number of required hours worked over a lifetime and to the increased importance given education and work.

*Lectures, seminar, 3 hours per week.*

## SOCI 3P36

**Political economy of Canada**

Analysis of Canadian society through a political economy perspective focussing on issues such as regionalism, the women's movement, aboriginal and Francophone political and legal claims, Canadian elites, the Canadian state, Canada and the Third World.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students with prior credit in SOCI 3P42.

## SOCI 3P46

**Native peoples and Canadian society**

The relationship between Canada's native peoples and selected institutions in Canadian society such as education, industry and government. Topics will include: the European impact on indigenous culture, the conflict between traditional life styles and Canadian institutions and the native peoples' responses.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 249hc.

## SOCI 3P47

**Race and ethnicity**

How relations among ethnic groups in various parts of the world represent contemporary examples of the ways in which physical, social and cultural differences are used to justify intergroup hostility, prejudice and discrimination. Understanding the nature of ethnic relations in Canada through topics such as multiculturalism, racism, immigration policy and the maintenance of ethnic identity.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 349hc.

## SOCI 3P51

**Gender and society**

(also offered as WISE 3P51)

An examination of the ways in which gender functions as an organizing principle in society. The social construction of masculinity and femininity will be addressed from historical and cross-cultural perspectives. Particular attention will focus on gender in principal institutions of Canadian society: economy, state, family, education and military. Selected gender issues will include: men

and women in nontraditional occupations, women in the military, gender and power.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI (WISE) 2P51 or SOCI 346hc.

## SOCI 3P55

**Interpersonal behavior**

The processes through which individuals relate to one another, primarily in two-person and three-person contexts.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 366hc.

## SOCI 3P56

**Small groups**

Group properties, their development over time, their maintenance or modification in the face of changing situations; the impact of group membership on experience and behavior of individuals.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 367hc.

## SOCI 3P57

**Gerontology and the aging process**

Humanistic, social, historical and cross-cultural perspectives on gerontology and aging. Topics include: examination of conceptual and methodological approaches to studying aging; surveys of programs and prospects for the elderly; cultural, social and personal images of aging; the impact of social, psychological and biological processes affecting aging and the elderly within communities; social planning for the elderly.

*Lectures, seminar, 3 hours per week.*

## SOCI 3P61

**Sociology of correction**

An investigation of society's agencies of social control that are entrusted to work on rehabilitation of the deviant behavior of juvenile delinquents and adult criminals. Provincial jails and detention centres and federal penitentiaries are studied. Examples from other societies are also used in tracing innovative methods in correction.

*Lectures, 3 hours per week.*

Prerequisite: SOCI 2P61 or permission of the instructor.

Credit will not be granted to students who have prior credit in SOCI 306hc.

## SOCI 3P66

**Social movements**

(also offered as LABR 3P66)

Either a general survey of the impact of ideology on behavior and the subsequent development of social movements or specific examinations of particular movements such as: separatism, nationalism, fascism, Marxism, feminism, etc. The topic will vary from year-to-year.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 317hc.

## SOCI 3P83

**Family conflict and violence**

Conflict within modern family relationships. Considerations include contemporary research on spousal violence, power and decision-making, sexual abuse and child abuse. Particular attention will be given to the socio-historical factors which contribute to increased family stress. Institutional and interpersonal strategies for reducing family conflict will be examined.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 3V83.

## SOCI 3V10-3V19

**Selected research topics**

Selected methodological issues in sociology.

*Lectures, labs, 3 hours per week.*

## SOCI 3V80-3V89

**Selected topics in sociology**

Selected issues in sociology.

*Lectures, seminars, 3 hours per week.*

**1993-94: (3V85) Cross-cultural approaches to women and gender**

(also offered as WISE 3V85)

A global approach to the study of women and gender, through an examination of anthropological literature, both theoretical and ethnographic. Case studies from indigenous (non-state), peasant and industrial societies are examined to develop a comparative perspective on the cultural construction of gender and status of women.



## Sociology

### SOCI 3V90-3V99

#### Directed studies

Guided readings on a particular topic which is not covered in the department's regular course offerings. Topics must be chosen in consultation with a faculty member willing to supervise the tutorial. *Seminars, 3 hours per week.*

Prerequisite: permission of the instructor.

Note: Do not register until permission is obtained.

### SOCI 4F01

#### Honors seminar

The seminar will provide a forum for honors students to discuss their current research. The seminars' goals are to broaden the students' perspectives by exposing them to a variety of research topics, problems and settings and to enable them to examine and discuss their own work and that of their peers. *Seminars, 3 hours per week.*

Prerequisite: admission to year 4 or permission of the instructor.

Credit will not be granted to students who have prior credit in SOCI 490.

### SOCI 4F10

#### Research design for policy and planning

Examination of the relationship between theoretical analysis and research methods as a practical task. Special emphasis on applied topics such as evaluation research and needs assessment, areas of study which are important to social policy and planning. *Lectures, seminar, 3 hours per week.*

Prerequisite: SOCI 2F10 and either 3F10 or 3P11 and 3P12 or permission of the instructor.

### SOCI 4F90

#### Honors thesis

Students electing this honors option will be required to undertake an independent research project under the supervision of a member of the department. The results of the project will be presented as a thesis. The course will be conducted as a tutorial.

Prerequisite: SOCI 2F01, 2F10, 3F01, 3F10. SOCI 4F01 required and may be taken concurrently.

Credit will not be granted to students who have prior credit in SOCI 491.

### SOCI 4F91

#### Honors practicum

A student electing this honors option typically will serve as a research associate with a local social service agency. The exact nature of projects will vary with the agency; however, the faculty director, agency supervisor and student will negotiate a mutually acceptable set of expectations. The student will meet bi-weekly with the faculty director.

Prerequisite: SOCI 2F01, 2F10, 3F01, SOCI 3F10 (3P11 and 3P12). SOCI 4F01 required and may be taken concurrently.

Credit will not be granted to students who have prior credit in SOCI 495.

### SOCI 4P23

#### Research on popular culture (also offered as COMM 4P23)

Topics relevant to the mass media and popular culture. Students will design their own reading lists and projects and work in a largely self-directed manner. The methodological range of the projects will vary with the interests of instructor and students, but will likely include: content analysis, political economy, semiology, discourse analysis, audience receptivity and poststructuralism. *Seminars, 3 hours per week.*

Prerequisite: SOCI 1F90 and 2P23 or permission of the instructor.

Credit will not be granted to students who have prior credit in SOCI 4V81.

### SOCI 4P26

#### Advanced seminar in health and life course

Examination of selected social policy issues in medical sociology, psychiatric sociology, gerontology or related subdisciplines. Topics will vary and may include the politics of individualizing health problems, clinical sociology, issues on aging and related topics. *Seminar, 3 hours per week.*

Prerequisite: One of SOCI 3P26, 3P27, 3P57 or permission of the instructor.

### SOCI 4P32

#### Advanced seminar in the sociology of work

A critical examination of some of the

latest theoretical and research developments in the sociology of work. Topics may include the impact of technological innovation on the labor process, reconceptualizations of work and leisure, changes in the gendered nature of work, the role of the contemporary labor movement and international perspectives on labor and the labor force.

*Seminars, 3 hours per week.*

### SOCI 4P51

#### Advanced seminar in gender and society

(also offered as WISE 4P51)

Analysis of selected issues in gender and society. Particular emphases vary annually but include feminist theories, work, family, state, popular culture, race, militarism and violence.

*Seminars, 3 hours per week.*

Prerequisite: SOCI(WISE) 2P51 or 3P51 or permission of the instructor.

### SOCI 4P52

#### Sociology of knowledge

Knowledge as a social product; the cultural and temporal variations in knowledge as causal and as limiting factors in human behavior.

*Seminars, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 315hc.

### SOCI 4P61

#### Advanced seminar in deviance and criminology

Examination of selected issues in deviance and criminology. Topics may include theories and basic concepts, critical perspectives on law and social control, feminist perspectives on law and criminology and the politics of law and criminal justice.

*Seminars, 3 hours per week.*

Prerequisite: SOCI 2P33 or SOCI 2P61 or permission of the instructor.

### SOCI 4V10-4V19

#### Selected research topics

Selected methodological issues in sociology. Advanced methods for the measurement of variables and the analysis of data in the social sciences with special emphasis on the implications of various theoretical categories of data, multiple

approaches to the estimation of reliability and validity and the use of computer-assisted analytic procedures.

*Seminars, lab, 3 hours per week.*

**SOCI 4V80-4V89**

**Special topics in sociology**

Selected issues in sociology. Course content will vary, depending upon the interests of instructors and students.

**SOCI 4V90-4V99**

**Directed studies**

Guided readings on a particular topic which is not covered in the department's regular course offerings. Topics must be chosen in consultation with a faculty member willing to supervise the tutorial.

*Seminars, 3 hours per week.*

Prerequisite: permission of the instructor.

Note: Do not register until permission is obtained.

# Institute of Urban and Environmental Studies

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## Officers of instruction

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### Director

John Middleton

### Associate professors

Bruce W. Krushelnicki

John Middleton

### Assistant professors

David T. Brown

Ingrid Leman Stefanovic

### Professors emeriti

A.W. Frank Banfield

Robert C. Hoover

Co-operating faculty from the departments of Biological Sciences, Chemistry, Earth Sciences, Economics, Geography, Philosophy, Politics and Sociology.

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## General information

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*Mackenzie Chown, F202*

The Institute of Urban and Environmental Studies administers a variety of interdisciplinary programs:

1. Combined major programs in UEST at honors and pass levels with one of BIOL, CHEM, ECON, ERSC, GEOG, POLI or SOCI;
2. Combined major programs with other disciplines by special arrangement;
3. A single major program at honors and pass levels in Environmental Science;
4. A part-time certificate program.

Environment is understood as the set of factors that affect in any significant way the human species. It follows that study of human environments, whether natural

or built, is inherently interdisciplinary and that virtually every discipline in the university has a contribution to make.

The Institute's courses are taught by its own faculty, by faculty from other departments and occasionally by outside professionals. The aim is to provide an understanding of current environmental issues, training in appropriate methods of investigation and analysis and experience in developing creative solutions. The approach is interdisciplinary, combining the principles and methods of many disciplines. Topics such as pollution, resource management, land-use conflict, food supplies, quality of life and urban planning are examined in various contexts--political, legal, social, economic and physical--with special attention paid to the formulation of policy for change. Examples are chosen over a range of scales, from inner-city neighborhoods to the global ecosystem.

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## Combined major programs

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The Institute participates in combined major programs with the following co-major disciplines: Biological Sciences, Chemistry, Earth Sciences, Economics, Geography, Politics and Sociology. The course requirements for these are described below.

Combined major programs involving other disciplines are also possible; see section below on other combined majors.

Either the BA or BSc degree is granted depending on the co-major discipline. For a BSc, at least ten credits must be from science departments for an honors degree, or seven and one-half for a pass degree. Within each degree, students may apply for admission to the honors program at any time. This program provides students with the opportunity for a more intensive examination of issues in the field than is afforded in the related pass program.

## Honors program

Students who wish to pursue an honors combined major program must qualify for honors status in both Urban and Environmental Studies and the co-major discipline.

The normal program sequence, including the required UEST courses, is as follows:

### Year 1

UEST 1F90; one credit from co-major discipline; MATH credit as specified by the co-major discipline, otherwise, MATH 1P98; COSC 1P90 or 1P98; two electives, both of which should be used to satisfy context requirements.

### Year 2

UEST 2F96, 2F97; two credits in co-major discipline; one elective credit.

### Year 3

Two UEST credits at the 3(alpha)00 level or above, including at least one-half credit from UEST 3V10-3V34, but excluding 3V80-3V81; two credits in co-major discipline; one elective credit.

### Year 4

Either both UEST 4F90 and 4F91 or 4F95 and one other credit in UEST (thesis strongly recommended); two credits in co-major discipline; one elective credit numbered 3(alpha)90 or above.

To qualify for an honors degree a student must take a minimum of three credits at the 3(alpha)90 level or above and a minimum of seven credits in both departments.

## Pass program

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

**Course requirements for  
co-major disciplines**

**Biological Sciences**

**Honors**

BIOL 1F90, 2P04, 2P05; one credit from BIOL 2P90, 2P91, 2P93, 2P98; two year 3 BIOL credits; MATH 1P97, 1P98; two credits in BIOL, at least one of which must be at the year 4 level.

**Pass**

BIOL 1F90, 2P04, 2P05; one credit from BIOL 2P90, 2P91, 2P93, 2P98; two year 3 BIOL credits; MATH 1P97, 1P98.

**Chemistry**

**Honors**

CHEM 1P80, 1P81 or CHEM 1P90, 1P91; CHEM 2P01, 2P02, 2P12, 2P22, 2P32, 2P42, 3P40; one-half credit from CHEM 3P20, 3P30, 3P31; PHYS 1F20 or 1F90; MATH 1P93, 1P94; two credits in CHEM at the year 3 or year 4 level, at least one of which must be at the year 4 level.

**Pass**

CHEM 1P80, 1P81 or CHEM 1P90, 1P91; CHEM 2P01, 2P02, 2P12, 2P22, 2P32, 3P40; one-half credit from CHEM 3P20, 3P30, 3P31; PHYS 1F20 or 1F90; MATH 1P93, 1P94.

**Earth Sciences**

**Honors**

ERSC 1F95, 2P31, 2P61, 2P64, 3P31, 3P61; one-half credit from ERSC 2P01, 2P21, 3P24, 3P25; one credit in ERSC at the year 2 or year 3 level; CHEM 1P80, 1P81 or 1P90, 1P91; MATH 1P97, 1P98; two ERSC credits at the year 3 or year 4 level, at least one of which must be at the year 4 level.

**Pass**

ERSC 1F95, 2P31, 2P61, 2P64, 3P31, 3P61; one-half credit from ERSC 2P01, 2P21, 3P24, 3P25; one credit in ERSC at the year 2 or year 3 level; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; MATH 1P97, 1P98.

**Economics**

**Honors**

ECON 1P91, 1P92, 2P21, 2P22, 2P31, 2P32, 2P90 (MATH 1P98 is its prerequisite), 3P90, 3P91, 4P13, 4P14; two year 3 ECON credits; MATH 1P60, 1P97.

**Pass**

ECON 1P91, 1P92, 2P21, 2P22, 2P31, 2P32; ECON 2P90 (MATH 1P98 is its prerequisite); two year 3 ECON credits; MATH 1P60, 1P97.

**Geography - BA**

**Honors**

GEOG 1F90, 2P10, 3P57, 4F99 (GEOG 1F91 is strongly recommended as a science context credit, but students may not use both GEOG 1F90 and 1F91 to fulfil context requirements); one and one-half credits from GEOG 2P02, 2P03, 2P06, 2P07; one group A GEOG credit at the 3(alpha)00 level or above; one-half group A or group C GEOG credit at the 3(alpha)00 level or above; one year 4 credit in GEOG from group A or group C. (See Geography department calendar entry.) The courses selected cannot include both GEOG 4F90 and UEST 4F90, 4F91.

**Pass**

GEOG 1F90, 2P10, 3P57 (GEOG 1F91 is strongly recommended as a science context credit, but students may not use both GEOG 1F90 and 1F91 to fulfil context requirements); one and one-half credits from GEOG 2P02, 2P03, 2P06, 2P07; one group A GEOG credit at the 3(alpha)00 level or above; one-half group A or group C GEOG credit at the 3(alpha)00 level or above.

**Geography - BSc**

**Honors**

GEOG 1F91, 2P11, 3P56, 4F99; MATH 1P97, 1P98; one and one-half credits from GEOG 2P04, 2P05, 2P07, 2P09; one group B GEOG credit at the 3(alpha)00 level or above; one-half group B or group C GEOG credit at the 3(alpha)00 level or above; one year 4 credit in GEOG from group B or group C (See Geography department calendar entry.) The courses selected cannot include both GEOG 4F90 and UEST 4F90, 4F91.

**Pass**

GEOG 1F91, 2P11, 3P56; MATH 1P97, 1P98; one and one-half credits from GEOG 2P04, 2P05, 2P07, 2P09; one group B GEOG credit at the 3(alpha)00 level or above; one-half group B or group C GEOG credit at the 3(alpha)00 level or above. (See Geography department calendar entry.)

**Politics**

**Honors**

POLI 1F90 and six credits in POLI over years 2, 3 and 4; at least four credits should be numbered at 2(alpha)90 level or above, including at least two credits at the 3(alpha)90 level or above. These must include POLI 2F90 (or POLI 2P01 and any one of POLI 3P04, 3P06, 3V00-3V09, 4P01, 4P02, 4P04, 4V00-4V09). Students are also required to take POLI 2P80; one-half credit from POLI 3P12 or 4P30 and one-half credit from POLI 3P91 or 3P92.

**Pass**

POLI 1F90 and four credits in POLI in years 2 and 3. These must include POLI 2P01 (or 2F90) and 2P80. At least two credits should be numbered at the 2(alpha)90 level or above.

**Sociology**

**Honors**

SOCI 1F90, 2F01, 2F10 (MATH equivalent), 3F01; SOCI 3P11 and 3P12 (preferably taken in year 3), 4F01 and either 4F90, and 4F91 or UEST 4F90 and 4F91; one other credit in SOCI.

**Pass**

SOCI 1F90, 2F01, 2F10 (MATH equivalent), 3F01; one credit in SOCI.

**Other combined majors**

Students who wish to pursue a pattern of studies which does not coincide with existing combined major programs, may be allowed to follow a combined major program in UEST with another discipline (but not another interdisciplinary program) specifically designed for their interests. Consultation and written permission in advance are required.

## Urban and Environmental Studies

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### Environmental Science program

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The honors and pass degrees in Environmental Science combines the disciplinary skills of Biology and Chemistry, a suitable complement of courses in Mathematics and Computer Science and the interdisciplinary perspective of Urban and Environmental Studies.

It is important that students follow the program sequence of courses carefully to ensure that prerequisites for upper year courses are satisfied.

#### Honors

##### Year 1

UEST 1F90; BIOL 1F90; CHEM 1P80, 1P81 or CHEM 1P90, 1P91; COSC 1P90; MATH 1P98; one humanities or social science context credit.

##### Year 2

BIOL 2P04, 2P05; one credit from BIOL 2F01, 2P90, 2P93, 2P98; CHEM 2P42 and either CHEM 2P01 or 2P03; COSC 1P98; MATH 1P97; one humanities or social science context credit (not taken in year 1).

##### Year 3

UEST 2F97; one-half credit from UEST 3V20-3V34; one-half credit from UEST 3P42, 3P43, 3P55 or 3V10-3V15; one credit in BIOL numbered 2(*alpha*)90 or above; one credit in CHEM chosen in discussion with that department; one elective credit (ERSC 1F95 or PHYS 1F20 or GEOG 1F91 recommended).

##### Year 4

UEST 4F95; one-half credit from UEST 3P42, 3P43, 3P55 or 3V10-3V15; one-half credit from UEST 3V20-3V34; one credit from CHEM 4F90, 4F91; BIOL 4F92; one year 3 or year 4 BIOL credit; one elective credit. A minimum of three credits numbered 3(*alpha*)90 must be included in an honors degree.

#### Pass

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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### Certificate program

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The program leading to a certificate in Urban and Environmental Studies provides specialized knowledge for interested persons who already have a degree in a different field or equivalent professional experience. The admission requirements are the same as for the degree program. Prospective students should consult with the Institute director before beginning the certificate program. The program is normally taken part-time over a minimum of two academic years.

The certificate is awarded upon completion of at least four credits in UEST, beyond a degree, with an overall average of 70 percent and one credit consisting of MATH 1P98 and either COSC 1P90 or 1P98 for a total of five credits. The MATH/COSC requirements will be waived if equivalent courses have already been completed. Courses cannot be counted twice; therefore no UEST course can count for both a degree and a certificate (see page xx).

#### Required courses

UEST 2F96, 2F97; two year 3 and year 4 credits in UEST, (chosen in consultation with the director); MATH 1P98 and either COSC 1P90 or 1P98 if not already taken. Year 2 and year 4 courses may not be taken concurrently. Certificate students are not eligible for UEST 3V80 or 3V81.

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#### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

#### UEST 1F90

##### **Introduction to urban and environmental studies**

Principles needed for understanding the human environment from an interdisciplinary perspective. Examples are chosen from the urban, rural and natural environments of southern Ontario and from other parts of the world. The course discusses acute problems such as pollution, as well as positive aspects of human activity such as environmentally appropriate cities. Policy options, possibilities for creative social action and planned change are emphasized.

*Lectures, seminar, 3 hours per week.*

#### UEST 2F96

##### **Environmental principles and policy: human settlement systems**

The theory and practice of managing and governing urban systems. Public policy making, plan making and the process of community development. Roles of citizens, professionals and elected officials in the process of planned urban change. Studies of the city as human community, polity, administrative unit and physical plant.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to UEST (combined) majors until date specified in BIRT guide.

Prerequisite: UEST 1F90 or consult the instructor for permission to register.

#### UEST 2F97

##### **Environmental principles and policy: global systems**

Basic ideas and concepts of environmental sciences. Major variables of the global ecosystem including food and agriculture, population and health, biological conservation, water, energy, human settlements, policies and institutions.

*Lectures, seminar, 3 hours per week; occasional field trips.*

Restriction: Open only to UEST (combined), ENVS (single) majors until date specified in BIRT guide.

specified in BIRT guide.

Prerequisite: UEST 1F90 or consult the instructor for permission to register.

#### UEST 3P42

##### **Conservation planning**

Application of ecological theory to environmental planning for conservation of species and ecosystems in a world dominated by human activities. Parks, reserves, zoos, co-existence with humans in productive landscapes. Combining conservation with development. Effects of habitat fragmentation, genetic problems of small populations. The World Conservation Strategy, policies for governments and other organizations.

*Lectures, seminar, workshop, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisites: UEST 2F96 and 2F97 and MATH 1P98 or permission of the instructor.

#### UEST 3P43

##### **Materials, waste and recycling**

An overview of materials' life cycles, waste management and recycling. Traditional waste management methods, technological disposal, modern integrated waste management. The logistics and limits of recycling. Waste reduction and environmentally sensible design. Disposables versus reusables. Composting and organic waste management. Optimal materials use and life cycle analysis. Waste management policy and legislation.

*Lectures, seminar, workshops, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisites: UEST 2F96, 2F97 and MATH 1P98 or consult the instructor for permission to register.

#### UEST 3P52

##### **Urban planning analysis**

The theories, processes and methods of urban and regional planning in Canada. Topics include: population projection; survey techniques; land/space allocation; environmental service theory and practice; land change process; use of computer mapping and statistical analy-

sis; municipal taxation and budgeting.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisites: UEST 2F96 and 2F97 or permission of the instructor.

#### UEST 3P55

##### **Wild life management**

Practice and philosophy of wild life management. Introduction to Canadian wild life. Attitudes and values: conservation, preservation, utilitarianism. Wild life as a renewable resource. Biological and ecological concepts. Management tools and techniques. Non-consumptive uses of wild life. Management of economically unimportant species and endangered species. Wild life policy and legislation.

*Lectures, seminar, workshop, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisites: UEST 2F96, 2F97 and MATH 1P98 or consult the instructor for permission to register.

#### UEST 3P57

##### **Human services planning in the urban region**

Community objectives for quality of life through social services. Constitutional basis for social services, role of grants and transfer payments. Regional planning for social and area-development services. Social planning aspects of provincial planning legislation. Policy planning to reduce recidivism and promote prevention. Integration of social planning for quality of life, administrative planning for service-provision and planning for service centres.

*Lectures, seminar, workshop, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisites: UEST 2F96 and 2F97 or permission of the instructor.

#### UEST 3P58

##### **Environment and behavior**

Interdisciplinary study of the relation between human behavior and built and natural environments. Issues include

sources of urban stress (noise, pollution, crowding) and essentials of habitability (i.e., the proper "fit" between physical design and social needs and preferences). Applications to environmental policy and planning.

*Lectures, seminar, workshop, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisite: UEST 2F96 and 2F97.

#### UEST 3V10-3V15

##### **Interdisciplinary perspectives on pollution**

Specific topics to be selected. Each course in this series uses guest speakers from a variety of disciplines and backgrounds to explore one aspect of pollution.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisites: UEST 2F96 and 2F97 or consult the instructor for permission to register.

#### 1993-94: (3V12) Environmental toxins

Nature, origins, dispersal, persistence and breakdown of toxic substances in natural and built environments. Basic toxicological principles. Health effects of selected toxins; risk assessment. Methods of testing, detection and analysis. Scientific basis, rationale, regulatory aspects and policy dimensions of controlling toxic substances.

#### UEST 3V20-24

##### **Interdisciplinary perspectives on human settlements**

Specific topics to be selected. Each course in this series uses guest speakers from a variety of disciplines and backgrounds to explore one aspect of human settlements.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisites: UEST 2F96 and 2F97 or consult the instructor for permission to register.

**Urban and  
Environmental Studies**

**1993-94: (3V21) The nature of human settlements**

The evolving relationship of human settlements to the social, biological and physical needs of humans. The variety of form and structure of the Western city through history and in various locations.

UEST 3V25-3V29

**Interdisciplinary perspectives on international issues**

Specific topics to be selected. Each course in this series uses guest speakers from a variety of disciplines and backgrounds to explore one aspect of international issues as related to urban and environmental studies.

*Lectures, seminar, workshop, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisites: UEST 2F96 and 2F97 or permission of the instructor.

**1993-94: (3V25) International development and environment**

The relationship between environment and development, environmental implications of global resource dependencies, environmental policies and practices of Canadian and other development agencies.

UEST 3V30-3V34

**Interdisciplinary perspectives on environmental issues**

Specific topics to be selected. Each course in this series uses guest speakers from a variety of disciplines and backgrounds to explore one aspect of an urban and environmental issue.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisite: UEST 2F96 and 2F97 or permission of the instructor.

UEST 3V60-3V65

**Selected issues in urban policy**

An examination of specific issues of urban policy. These may vary from year to year.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to UEST (combined) and ENVS (single) majors with a minimum of 9.0 overall credits.

Prerequisite: UEST 2F96, 2F97 or permission of the instructor.

UEST 3V80-3V81

**Co-operative education**

A program of practical experience in the career opportunities available to students of Urban and Environmental Studies. Students must submit a final report for assessment. The course may commence in either May, September or January of each year.

Restriction: Consult the director regarding permission to register.

Prerequisite: third- or fourth-year standing in Urban and Environmental Studies or Environmental Science.

Note: Eligibility will also be determined by academic standing. May be repeated once.

UEST 3V90-3V95

**Special topics**

A tutorial/seminar/special projects or directed readings course in an area of urban and environmental studies not represented by other courses.

Restriction: Consult the director regarding permission to register.

Prerequisites: UEST 2F96 and 2F97 and consult the instructor for permission to register.

UEST 4F90

**Honors thesis**

To be taken in conjunction with UEST 4F91. Each student will undertake an original research project under faculty supervision, with a schedule including tutorials and class meetings held throughout the year. An oral defence of the final report will be required.

Restriction: Open only to UEST (combined) majors with approval to year 4.

Co-requisite: UEST 4F91.

Prerequisite: admission to year 4 honors program.

Note: Please consult the director prior to registration.

UEST 4F91

**Literature research and seminar**

To be taken in conjunction with UEST 4F90. Each student will undertake a detailed study of the literature relevant to the topic of the honors thesis, under faculty supervision. The review will be included in the thesis.

Restriction: Open only to UEST (combined) majors with approval to year 4.

Co-requisite: UEST 4F90.

Note: Please consult the director prior to registration.

UEST 4F95

**Advanced seminar in urban and environmental policy**

A seminar course on selected topics in urban and environmental policy chosen in conjunction with Institute faculty and faculty from co-operating departments.

*Seminars, 3 hours per week*

Restriction: Open only to UEST (combined) majors with approval to year 4.

Note: Please consult the director prior to registration.

# Women's Studies

## *Director*

June Corman, Sociology

## *Associated faculty*

Judith Blackwell, Sociology

Susan M. Clark, Sociology

June Corman, Sociology

Karen Dubinsky, History

Ann Duffy, Sociology

Ann Marie Guilmette, Recreation and Leisure Studies

Deborah Harrison, Sociology

Merjean Morrissey-Clayton, Film

Studies, Dramatic and Visual Arts

Joan Nicks, Film Studies, Dramatic and Visual Arts

Cecilia Reynolds, Faculty of Education

Mary Frances Richardson, Chemistry

Viola Shuart, Child Studies

Stella Slade, English

A. Victoria Soady, Classics

Jean Wilson, Physical Education

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## General information

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The Women's Studies Program was approved by the Brock Senate in December, 1990 and is dedicated to the memory of fourteen young women of the École Polytechnique whose death in 1989 dramatized the need for more understanding among women and men.

The combined major program in Women's Studies is designed for students who realize the value of interdisciplinary, cross-cultural approaches to learning and who wish to participate in a program whose subject matter and perspective are neither androcentric nor ethnocentric. The program offers to students a critical awareness of the importance of gender as an essential factor in cultural expressions, human relations and scholarly production.

Students are expected to develop the analytical skills to test hypotheses derived from feminist theories, as well as to evaluate scholarship that does not take this perspective into account. The pro-

gram also encourages students to undertake self-generated projects, in order to explore the validity of established theoretical frameworks as well as feminist alternatives.

The Women's Studies Program examines how gender influences both men and women. It encourages students to develop a critical perspective on assumptions about institutions, ideologies, history, human nature, science, language and culture. Women's Studies serves as an alternative to the traditional curriculum which tends to describe and analyze phenomena from an androcentric viewpoint. One of the strengths of the program is its diversity of perspectives in the critical examination of theoretical and empirical issues. Its ultimate aim is to further human understanding through exploring and respecting differences.

Although the primary objectives of the Women's Studies Program are academic, the program also provides an environment supportive to women in the University and in the community at large. Hence, the Women's Studies Program emphasizes the importance of women's perceptions and self-definition. Because of the level of community interest in and support for Women's Studies, the program promotes activities and encourages research that benefits both the Brock community and women in the greater Niagara Region. It provides a forum for community issues of relevance to women and maintains a liaison with community organizations.

The academic program in Women's Studies is based upon a combined major with humanities, science or a social science discipline. The interdisciplinary emphasis of the program will encourage any combined major programs that are consistent with its academic objectives and the interests of students.

Students may be admitted to an honors program at any time. This program provides students with the opportunity for a more intensive examination of issues in the field than is offered in the BA pass degree program.

The following course patterns are based

on the normal combined major requirements: seven credits in each discipline plus six additional credits for an honors degree; five credits in each discipline plus five additional credits for a pass degree. Students enrolling in a combined humanities and WISE major will be required to complete one credit in a language other than English. Students should consult the co-major discipline department with respect to ancillary requirements.

Students will meet with the director of Women's Studies and with the chair of the co-major discipline department at the end of the first year of study, to ensure that the choice of courses will meet the criteria for the combined major degree.

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## Honors program

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WISE 1F90, 2F90, 2F91, 3F91, 4F90; two credits in WISE or from the list of approved or cross-listed WISE courses (see below). Students intending to pursue an honors degree should take WISE 2F90 and 2F91 in year 2. Students are encouraged to discuss the thesis requirement with the program director well before year 4.

### *Year 1*

WISE 1F90; one credit from co-major discipline; one science context credit (SCIE 1F30 or BIOL 1F25 are recommend for non-science majors); one humanities context credit; one elective credit.

### *Year 2*

WISE 2F90, 2F91; two credits from co-major discipline; one elective credit.

### *Year 3*

WISE 3F91; one credit from the list of approved or cross-listed WISE courses; two credits from co-major discipline; one elective credit.

### *Year 4*

WISE 4F90; one credit from the list of approved or cross-listed WISE courses; two credits from co-major discipline; one elective.



## Women's Studies

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### Pass program

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WISE 1F90, 2F90, 2F91, 3F91; one credit from the list of approved or cross-listed WISE courses. Students may take both WISE 2F90 and 2F91 in second-year or delay one until third-year. Either way both are required by the end of the third-year.

Satisfactory completion of the first three years of the honors program entitles a student to apply for a pass degree.

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### Prerequisite and restrictions

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You must check course descriptions to ensure that you meet prerequisites. Students may be deregistered, at the request of the instructor, from any course for which prerequisites and/or restrictions have not been met.

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### Description of courses

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Please note that not all courses are offered in every session. Refer to the applicable term timetable for details.

#### WISE 1F90

##### Introduction to women's studies

An exploration from women's perspectives of the gendered nature of society and culture. Areas of inquiry may include: science, politics, work, health, history, knowledge and popular culture. *Lectures, seminar, 3 hours per week.* Credit will not be granted to students who have prior credit in EXST 1F92.

#### WISE 2F21

##### The family

(also offered as SOCI 2F21)

Family patterns including gender roles and the dynamics of family change and development. Topics include: marriage and family issues, gender role socialization and change, dual careers, alternative life styles, gender roles in cross-cultural perspective and marital

and family relationships past, present and future.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI(CHST) 3P21 or 3P51.

#### WISE 2F80

##### Gender differences in language and language use

(also offered as LING 2F80)

Gender in the structure and use of language at different levels of linguistic analysis (speech style/pronunciation, vocabulary, sentence construction, discourse). Discussion of selected cultural variables and their relationship to language. Examples from English as well as a wide range of other languages. *Lectures, seminar, 3 hours per week.*

#### WISE 2F90

##### Feminist theories and research strategies

Paradigms in feminist theory: liberal feminism; Marxist feminism; radical feminism; socialist feminism; feminist phenomenology and post-Modern feminism. Topics may include: feminist theories of psychological development; feminist theory and the state.

*Lectures, seminar, 3 hours per week.*

Prerequisite: WISE 1F90 or EXST 1F92 or permission of the instructor.

#### WISE 2F91

##### The status of women: historical perspectives

Primary source materials, written and visual, reveal the evolution of women's views of themselves, first as imposed by men, then as expressed by women once they began to speak for themselves. Sources may include: Aristotle (on biology), Soranus (on gynaecology), Sappho, George Eliot, female Romantic Poets, Florence Nightingale and the Suffragists, de Beauvoir, Greer and Atwood; silent to contemporary films by women. Canadian history, including native women, the early settlers, immigrant women and the feminist movement in Canada.

*Lectures, seminar, 3 hours per week.*

Prerequisite: WISE 1F90 or EXST 1F92 or permission of the instructor.

#### WISE 2P61

##### Women in the ancient world

(also offered as CLAS 2P61)

Problems and issues of particular relevance to women in Greek and Roman society. Topics will include: social, political and legal rights, prostitution, religious duties, marriage and children, birth control and abortion.

*Lectures, seminar, 3 hours per week.*

#### WISE 2P62

##### The politics of gender in Archaic and Classical Greece

(also offered as CLAS 2P62)

Social issues of Ancient Greece as viewed from a modern perspective. Topics include: familial bonding, female and male identity, domestic and civil violence, sexuality and social status, power dynamics within the family and city-state.

*Lectures, seminar, 3 hours per week.*

#### WISE 2P70

##### Francophone women writers in translation I

(also offered as FREN 2P70)

Texts by women writers (in translation) from the 14th to the 19th century. Texts may vary from year-to-year. French majors can take this course only as an elective.

*Lectures, 3 hours per week.*

#### WISE 2P71

##### Francophone women writers in translation II

(also offered as FREN 2P71)

Texts by women writers (in translation) of the 20th century. Texts may vary from year-to-year. French majors can take this course only as an elective.

*Lectures, 3 hours per week.*

#### WISE 2P85

##### Francophone women writers of the 20th century

(also offered as FREN 2P85)

Francophone women writers outside of France. Particular emphasis on Québec women writers. Authors studied may include Nicole Brossard, France Theoret, Jovette Marchessault and texts studied may focus on a variety of genres.

*Lectures, 3 hours per week.*

Co-requisite: FREN 2F03.

Credit will not be granted to students who have prior credit in FREN 2F85.

WISE 2P86

**French women writers of the 20th century**

(also offered as FREN 2P86)

A selection of texts by French women writers of the 20th century. Authors studied include: Colette Simone de Beauvoir, Marguerite Duras, Marguerite Yourcenar.

*Lectures, 3 hours per week.*

Co-requisites: FREN 2F03 and either 2F00 or 2F10.

Credit will not be granted to students who have prior credit in FREN 2F85.

WISE 2P93

**Psychology of women**

(also offered as PSYC 2P93)

This is an introductory course aimed at understanding some of the social, personal and political implications of gender. Topics will include: theoretical perspectives on the study of gender differences, stereotypes, sexuality, biological influences, as well as issues related to achievement, intimacy, mental and physical health, power and justice.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PSYC (single or combined) and WISE (combined) majors until date specified in BIRT guide.

Prerequisite: PSYC 1P90.

WISE 2P99

**Philosophy of sex**

(also offered as PHIL 2P99)

The application of ethics to questions of human sexuality. Topics for analysis include sexual values, the semantics of sex, the concepts of the romantic and eternal-feminine, respect for the personhood of women, censorship, pornography, legal enforcement of morality, sex in advertising, prostitution and AIDS.

*Seminar, 3 hours per week.*

Prerequisites: University credit in PHIL or HLST(EXST)2F50 or permission of the instructor.

WISE 3F33

**Law and society**

(also offered as SOCI 3F33)

Sociological theories of law, feminist legal analysis, Canada's legal institutions and the Charter of Rights and Freedoms. Relationships between Canadian law and aboriginal peoples, the economy and the environment. Topics relevant to women and the law (e.g., family law, reproduction, interpersonal violence and the sex trades) will illustrate how the feminist critique of legal theory and practice presents challenges to the legal system.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI 318hc or SOCI 3P33.

WISE 3F91

**Feminist research seminar**

An interdisciplinary seminar, team-taught by instructors from different faculties, which examines recent feminist research and its distinctive approaches and methods. Students will initiate and execute their own projects.

*Seminar, 3 hours per week.*

Restriction: Open only to WISE (combined) majors until date specified in BIRT guide.

Prerequisite: WISE 2F90 and 2F91 or permission of the instructor.

WISE 3F97

**Screened women**

(also offered as COMM 3F97 and FILM 3F97)

A critical study of women's representation as aesthetic and cultural subject, from classical Hollywood cinema to contemporary women's cinema, in the context of feminist film theories and including other popular media (i.e., music videos, television).

*Lectures, seminar, 3 hours per week, plus weekly film lab.*

Prerequisites: FILM 1F94, 2P91 and 2P92 or WISE 1F90 and 2F91 or permission of the instructor.

WISE 3M01

**Women in art**

(also offered as VISA 3M01)

The contributions of women artists to the history of Western painting and sculpture from the 16th to the 20th century. Feminist critical theories are used to encour-

age an understanding of how gendered attitudes have affected the development of art history and practice.

*Lectures, seminar, 3 hours per week.*

WISE 3P30

**Sociology of women and work**

(also offered as LABR 3P30 and SOCI 3P30)

Both quantitative and qualitative research will explore the societal significance and implications of the change in women's participation in paid employment and domestic labor in this century. Focus on: the ghettoization of the female labor force, women in professional and non-traditional occupations, microtechnology, part-time work and unionization.

*Lectures, seminar, 3 hours per week.*

WISE 3P51

**Gender and society**

(also offered as SOCI 3P51)

An examination of the ways in which gender functions as an organizing principle in society. The societal construction of masculinity and femininity will be addressed from historical and cross-cultural perspectives. Particular attention will focus on gender in principal institutions of Canadian society: economy, state, family, education and military. Selected gender issues will include: men and women in non-traditional occupations, women in the military, gender and power.

*Lectures, seminar, 3 hours per week.*

Credit will not be granted to students who have prior credit in SOCI(WISE)2P51 or in SOCI 346hc.

WISE 3P71

**Gender, sex and politics**

(also offered as POLI 3P71)

Theoretical and practical issues in the relationships among gender, sex and politics, such as sexual equality and its nature and implications for public and private life.

*Lectures, seminar, 3 hours per week.*

WISE 3P92

**Gender and sexuality in childhood and adolescence**

(also offered as CHST 3P92)

Interdisciplinary perspective on gender acquisition and sexual development

## Women's Studies

based on social psychological, sociological, historical and cross-cultural accounts. Special topics include: child sexual abuse, juvenile prostitution and sex education.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to WISE (combined), CHST (single or combined) and BA/BEEd majors until date specified in BIRT guide. Open only to students with a minimum of 8.0 overall credits.

Prerequisite: PSYC 1F90 or SOCI 1F90 or WISE 1F90 or CHST 2F10.

### WISE 3V85

#### **Cross-cultural approaches to women and gender**

(also offered as SOCI 3V85)

A global approach to the study of women and gender, through an examination of anthropological literature -- both theoretical and ethnographic. Case studies from indigenous (non-state), peasant and industrial societies are examined to develop a comparative perspective on the cultural construction of gender and the state of women.

*Lectures, seminar, 3 hours per week.*

### WISE 4F90

#### **Honors thesis**

An independent research project under the supervision of a faculty adviser. Directed studies tutorial.

Restriction: Open only to WISE (combined) majors with approval to year 4.

Note: Provisional registration only. Consult the director prior to first class.

### WISE 4P51

#### **Advanced seminar in gender and society**

(also offered as SOCI 4P51)

Analysis of selected issues in gender and society. Particular emphasis vary annually, but include: feminist theories, work, family, state, popular culture, race, militarism, violence and environmentalism.

*Seminars, 3 hours per week.*

Prerequisite: SOCI(WISE)2P51 or 3P51 or permission of the instructor.

### WISE 4P87

#### **Women and writing in Québec**

(also offered as FREN 4P87)

Texts by women writers of Québec that examine the role of women as writers and subjects. Theoretical and critical per-

spectives on creative writing. Texts may vary from year-to-year.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2P85 or permission of the instructor.

Credit will not be granted to students with prior credit in FREN(WISE) 3F99.

### WISE 4P88

#### **Women and writing in France**

(also offered as FREN 4P88)

Texts by women writers in France, over the centuries, that examine the role of women as writers and subjects. Theoretical and critical perspectives on creative writing. Texts may vary from year-to-year.

*Lectures, 3 hours per week.*

Prerequisite: FREN 2P86 or permission of the instructor.

Credit will not be granted to students with prior credit in FREN(WISE) 3F99.

### WISE 4P95

#### **Women and sport**

(also offered as PHED 4P95)

Historical and current issues relating to women's participation in sport. The influence on performance of physiological, psychological and sociological factors.

*Lectures, seminar, 3 hours per week.*

Restriction: Open only to PHED (single) and WISE (combined) majors with a minimum of 10.0 overall credits.

Prerequisites: PHED 3P95 or SOCI 2P51 or WISE 2F91 and consult the instructor for permission to register.

#### **Departmental offerings which are approved Women's Studies credits:**

ENGL 2M92	Women novelists and the development of the novel
FILM 2F97	Canadian cinema
HLST 2F50	Aspects of human sexuality
PHIL 2P18	Introduction to post-Modernism
POLI 3P06	Philosophy, politics and the family
SOCI 2V81	Women and development
SOCI 3V80	Sexuality and society
SOCI 3V81	Women in cross-cultural perspective
SOCI 3V83	Family and violence
SOCI 4P33	Women and the state

# Scholarships, Awards and Financial Assistance

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## Medals

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Prior to each Convocation the academic records of graduands are reviewed and, on the recommendation of Senate, medals are presented to students with exceptional standing in their university careers.

The Governor General's medals are presented at Spring Convocation to students graduating from that Convocation or the previous Fall Convocation in recognition of outstanding scholastic achievement.

Vice-Chancellor's Medals are presented at Spring Convocation to students whose consistent work at a superior level warrants recognition.

## Medalists 1992

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**Governor General's Silver Medal:**  
Christopher Dywan, *St. Catharines*

### Vice-chancellor's Medals:

Paul Keul, *Elmira*  
Patricia Reininger, *Niagara Falls*  
Neva Jane Tesolin, *St. Catharines*  
Lee Tyn Yee Kin Tet, *Mauritius*

## Deans' honors list and in-course scholarship recipients 1992

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### Deans' Honors List

Students are placed on the Deans' Honors List if they have completed the normal maximum course load in their program in the preceding Fall/Winter Session with an overall sessional average of 80 percent.

### Business Administration

Susan A. Anderson, *St. Catharines*  
Rhonda L. Baker, *Welland*  
Jodi L. Battram, *St. Catharines*  
Adam C. Burke, *St. Catharines*  
Stephen W. Campbell, *Dresden*  
Norman Chasse, *Welland*  
Catharine I. De Ruyte, *Wainfleet*  
Kerry E. Duff, *Minesing*  
Jeffrey H. Flanagan, *Peterborough*  
Marc G. Fleury, *St. Catharines*  
Derek W. Foote, *Port Hope*  
Kenneth D. Friesen, *Vineland Station*  
Wei Seng Gan, *Washington, D.C.*  
John W. Gotts, *Niagara Falls*  
Lara Greguric, *St. Catharines*  
Graham R. Greenidge, *Barbados*  
Bryan G. Guilfoil, *Manilla*  
David I. Gutscher, *St. Catharines*  
Tracy A. Hahn, *Waterloo*  
Melanie D. Hewitson, *Milton*  
Michele Y. Howe, *Burlington*  
Rafiq R. Janmohamed, *Etobicoke*  
Brian M. Jones, *Simcoe*  
Tony T. Koivisto, *Cambridge*  
David G. Kraulis, *St. Catharines*  
Pamela Lauber, *Kitchener*  
Jason Long, *Thorold*  
Susan McCracken, *Welland*  
Andrew K. Misener, *St. Catharines*  
Theresa M. Muileboom, *Wainfleet*  
Janet L. Nelson, *Jordan Station*  
Kenna-Lynn Oka, *St. Catharines*  
Todd A. Osborne, *Burlington*  
Jeff R. Ostrow, *McGregor*  
Paul E. Roberts, *St. Catharines*  
Danney Russell, *Georgetown*  
Deanna P. Sim, *Lindsay*  
Greg Smith, *Grimby*  
Pamela M. Smith, *St. Catharines*  
Ronald J. Sneek, *St. Catharines*  
Jennifer A. Stone, *Fonthill*  
Rolande E. Thurston, *Islington*  
Paul B. Topp, *Etobicoke*  
Jennifer L. Webb, *Niagara Falls*  
Cheryl L. Wiens, *St. Catharines*

### Humanities

Linda Alberico, *Winona*  
Pamela Alway, *Grimby*  
James E. Baldwin, *Burlington*  
Anna-Marie Bernhardt, *Hamilton*  
Kevin T. Boese, *Niagara-on-the-Lake*  
Leanna D. Bradley, *Gravenhurst*  
Meredith K. Browne, *Mount Brydges*  
Carmelo G. Castiglione, *Burlington*  
Christopher K. Cronin, *Grimby*  
Cathy H. De Rubeis, *St. Catharines*

Godelinde J. Degroot, *Wainfleet*  
Christina Deluca, *Stoney Creek*  
Krista Dudar, *Brampton*  
Alexandra F. Dunn, *Brockville*  
Stephen H. Ellison, *St. Catharines*  
Leonard D. Ferry, *Thorold*  
Paul Gallagher, *Niagara Falls*  
Marcus Hadley, *St. Catharines*  
Ginny L. Henninger, *Branchton*  
Patricia D. Hiebert,  
*Niagara-on-the-Lake*  
Hardy Hightower, *Grimby*  
Shelley A. Karcher, *Gowanstown*  
Sherry L. Karcher, *Gowanstown*  
Norbert M. Kuebeck, *St. Catharines*  
Janet L. Latta, *Bright's Grove*  
Jacqueline M. Maiolo, *Thorold*  
Rosalie Maltese, *St. Catharines*  
Simon A. Orpana, *Barrie*  
Christiaan A. Ottaway, *Caledon East*  
Geraldine R. Parent, *Thorold*  
Colleen E. Pielechaty, *Wainfleet*  
Amy J. Shaw, *St. Catharines*  
Tracy C. Taylor, *Orton*  
Delaney Turner, *Welland*  
Thomas Wall, *Niagara-on-the-Lake*  
Judy Siu-kiu Wu, *Toronto*

### Mathematics and Science

Richard C. Bodner, *St. Catharines*  
Sandy D. Bozzo, *Hamilton*  
Kevin D. Brett, *West Hill*  
Rhea Brillinger, *Waterloo*  
Rosemary Caltagirone, *Stoney Creek*  
Richard H. Cleve, *St. Catharines*  
Jennifer A. Copeland, *Fenwick*  
Anthony Crocco, *Niagara Falls*  
Angela K. Forth, *Bracebridge*  
Marvin K. Franz, *Niagara-on-the-Lake*  
William D. Friend, *St. Catharines*  
Paul L. Grebenc, *St. Catharines*  
Sean M. Hanna, *Fonthill*  
Denise L. Hannah, *Vineland*  
Peter W. Harris, *Niagara Falls*  
Lisa J. Kamphuis, *St. Catharines*  
Loubna Kayssar, *Lebanon*  
Pamela L. Klassen, *St. Catharines*  
Charles A. Koop, *Vineland*  
Randy S. Koop, *St. Catharines*  
Jeffrey M. Kormos, *Fonthill*  
Rahul Kumar, *St. Catharines*  
Edward C. Little, *Welland*  
Kai Luo, *St. Catharines*  
Ying Kit Man, *St. Catharines*  
Cheryl A. Marcinkow, *Sarnia*  
Jane E. Marshall, *St. Catharines*  
Kathryn J. Miller, *Alberta*  
Laura F. Morgan, *Thorold*

## Scholarships and Awards

Jennifer L. Mueller, *Welland*  
Marie C. Pacecca, *St. Catharines*  
Brian G. Patton, *Hamilton*  
Amy E. Peaire, *St. Catharines*  
Karen E. Poole, *Lambeth-Westminister*  
Glenda I. Prudom, *Wyoming*  
John-David M. Ross, *Stratford*  
Kerrie E. Rusk, *Niagara Falls*  
Kathryn G. Sanderson, *Delaware*  
Enrico M. Schirru, *Welland*  
Judith A. Shiels, *Burlington*  
Geraldine J. Sinke,

### *Niagara-on-the-Lake*

Tracy A. Snyder, *Belmont*  
Hemant K. Srivastava, *St. Catharines*  
Meena Srivastava, *St. Catharines*  
Valerie E. Studerus, *Lucan*  
Lisa A. Teather, *St. Catharines*  
John D. Thompson, *Thorold*  
Terence Trofymowych, *Oshawa*  
Mackenzie R. Troyer, *Tillsonburg*  
Noel C. Walker, *Beamsville*

### Physical Education and Recreation

Michelle D. Belzil, *St. Catharines*  
Teresa A. Brady, *St. Catharines*  
Nancy Capogna, *St. Catharines*  
Kimberley Griffin, *Smithville*  
A. Francisca Haak, *Simcoe*  
Lisa J. Redmond, *Barrie*  
Daniel F. Sullivan, *St. Catharines*  
Janet L. Swain, *London*

### Social Sciences

Lisa M. Andres, *Niagara-on-the-Lake*  
Paula D. Arbour, *Clearwater*  
Jodi L. Ashbaugh, *Hamilton*  
Lisa J. Assaly, *Vankleek Hill*  
Daniela R. Attardo, *Burlington*  
Lisa L. Austin, *Oakville*  
Melissa K. Baldry, *Lindsay*  
Angela Barclay, *Port Perry*  
Stephanie A. Bass, *Petrolia*  
Jennifer M. Beaton, *Orangeville*  
Clinton E. Betts, *St. Catharines*  
Rebecca L. Bond, *Hamilton*  
Shelley A. Bonney, *Cambridge*  
Sandra A. Borg, *St. Catharines*  
Paddi L. Brenner, *Niagara-on-the-Lake*  
Karen R. Brinkman, *Chatham*  
Joni M. Brown, *Burlington*  
Teralee G. Brunni, *Thorold*  
Leah D. Budzinski, *Cumberland*  
Tracy M. Burt, *London*  
John Cairney, *St. Catharines*  
Barbara J. Chamberlain, *Jordan Station*  
Leah E. Champagne, *Fonthill*  
Tracey A. Clark, *Neustadt*

Shelly A. Clelland, *Scotland*  
Anita Collee, *Niagara Falls*  
Cynthia M. Corbett, *Caledonia*  
Lianne J. Cornies, *Leamington*  
Sherry L. Cosby, *Smithville*  
Catherine L. Cretney, *St. Catharines*  
Michael Demelo, *Mississauga*  
Catharine A. Denstedt, *Listowel*  
Anne Marie Di Biase, *Niagara Falls*  
Vita G. Dipietro, *St. Catharines*  
Melissa A. Dorion, *Chatham*  
Gregory J. Dowdall, *Owen Sound*  
Catharine A. Duff, *London*  
Merelee K. Eckert, *St. Catharines*  
Sheri L. Eggleton, *Welland*  
Denise M. Elliott, *Niagara Falls*  
Paul M. Emblin, *Lively*  
Naomi A. Enns, *Thorold*  
Bonnie L. Famme, *Stratford*  
Betty Ferko, *Hamilton*  
Shannon L. Firby, *Tottenham*  
Pamela D. Fitzell, *Brampton*  
Laura E. Foster, *Fonthill*  
Barbara E. Frederikse, *Guelph*  
Marsha L. Grantham, *St. Catharines*  
Laura C. Grimaldi, *St. Catharines*  
Alysa D. Grisewood, *Brantford*  
Michelle L. Hart, *Kitchener*  
Stacey L. Hartoon, *London*  
Joanne T. Heit, *Sarnia*  
Lynne M. Henwood, *Hamilton*  
Jennifer G. Hiemstra, *St. Catharines*  
Andrea L. Hildebrandt, *Fonthill*  
Joan M. Hyatt, *St. Catharines*  
Amy M. Iamarino, *Burlington*  
Margaret C. Jackson, *St. Catharines*  
Jeanine J. Janzen, *St. Catharines*  
Erin L. Johnson, *Brantford*  
Vanessa Johnston, *Mississauga*  
Sheryl Johnston, *Grimsby*  
Kristina L. Keery, *Stoney Creek*  
Karen Keleher, *Guelph*  
Angela L. Klages, *Desboro*  
Debra L. Krause, *St. Catharines*  
Karen A. Lindert, *Aylmer*  
Rosaleen D. Lopes, *Whitby*  
Marjo A. Luomala, *South Porcupine*  
Kristi G. MacDonald, *Hamilton*  
Melissa Maney, *Thorold*  
Alison Mann, *St. Catharines*  
Pamela J. Marks, *St. Catharines*  
Christina L. Massicotte, *Sarnia*  
Kathy McAllister, *Paris*  
Kimberley L. McElwain, *Phelpston*  
Alice E. McInnis, *Glanworth*  
Karen E. McNaughton, *Osgoode*  
Heather C. McNeil, *Georgetown*  
G. Craig Miller, *Florence*

Elizabeth A. Mitchell, *St. Catharines*  
Kristin Morrison, *Bolton*  
Catherine D. Mundle, *St. Catharines*  
Linda L. Nevill, *Delhi*  
Aleksandra Njegovan, *Stoney Creek*  
Bridie L. Nunn, *St. Catharines*  
Christina M. Oeggerli, *Bainsville*  
Michelangelo Pasquale, *St. Catharines*  
Heidi Payne, *St. Catharines*  
Susy Princ, *Kitchener*  
Renee J. Ramseier, *Ottawa*  
Lisa G. Ransky, *Grimsby*  
Kendra L. Regan, *Kitchener*  
Ralph L. Regis, *Terrace Bay*  
Debbie F. Reynolds, *Corbyville*  
Jennifer L. Robertson, *Hamilton*  
Mary L. Rundle, *Centralia*  
Corrine E. Russell, *Windsor*  
Marcia L. Sage, *Fonthill*  
Debra J. Satchell, *Mitchell*  
Angela M. Saunders, *Brampton*  
Julie A. Schade, *Dashwood*  
Lynn M. Schelstraete, *London*  
Debra J. Seliga, *Ridgetown*  
Judith A. Shackleton, *Stratford*  
Joanne M. Sijm, *Port Colborne*  
Sheila A. Sikora, *Thunder Bay*  
Margo L. Silke, *London*  
Linda Skelton, *Port Colborne*  
Ralph F. Skilton, *St. Catharines*  
Tricia G. Skowby, *Stratford*  
Kathryn C. Smelsky, *Welland*  
Shannon L. Smith, *Westmeath*  
Jennifer L. Spence, *Manotick*  
Sheila L. Spicer, *Peterborough*  
Deanna Sundin, *Hamilton*  
Lisa Vandenhoeck, *Hamilton*  
Robin L. Vittoria, *Niagara Falls*  
Michelle L. Vosburgh, *Fenwick*  
Susan A. Wagler, *Wellesley*  
Tracey L. Watson, *Tara*  
Julie L. Waugh, *Barrie*  
Alice A. Weir, *North York*  
Jennifer Wells, *Mississauga*  
Michelle L. Werth, *Kitchener*  
Maryann M. White, *North York*  
Susan J. Williamson, *Gloucester*  
Sandra L. Winstanley, *Cambridge*

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### Donor in-course scholarship winners 1992

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**25th Anniversary Scholars**  
Anna-Marie Bernhardt, *Hamilton*  
Denise Elliot, *Niagara Falls*

Peter Harris, *Niagara Falls*  
Kenna Oka, *St. Catharines*  
Lisa Redmond, *Barrie*

**Aileen Hood Memorial Scholar**  
Lisa Jeanne Redmond, *Barrie*

**Alumni Association Scholars**  
Daniela Attardo, *Burlington*  
Clinton Betts, *St. Catharines*  
Leah Budzinski, *Cumberland*  
Norman Chasse, *Welland*  
Betty Ferko, *Hamilton*  
Jennifer Mueller, *Welland*  
Kenna-Lynn Oka, *St. Catharines*  
Judith Ann Shiels, *Burlington*  
Kathryn Smelsky, *Welland*  
Greg Smith, *St. Catharines*  
Maryann White, *North York*

**Birks Family Foundation Scholars**  
Richard Cleve, *St. Catharines*  
Kenna-Lynn Oka, *St. Catharines*

**Club Heidelberg Scholars**  
Paul Gallagher, *Welland*

**Club Rheingold Scholars**  
Lee Ann Mills, *Burlington*

**Dr. Alan Earp Alumni Scholar**  
Lisa M. Andres, *Niagara-on-the-Lake*

**Findley Estate Scholars**  
Linda Skelton, *Port Colborne*  
Jennifer Wells, *Mississauga*

**Gardiner Estate Scholar**  
Peter Harris, *Niagara Falls*

**George Head Memorial Scholar**  
David Gutscher, *St. Catharines*

**Gertrude Millward Scholar**  
Leonard Ferry, *Thorold*

**J. P. Bickell Foundation Scholars**  
Kevin David Brett, *West Hill*  
Michael Johnson, *Niagara Falls*

**Joseph Dennis Scholar in Italian**  
Rosalie Maltese, *St. Catharines*

**Raffaele DeLuca**  
Rosalie Maltese, *St. Catharines*

**Kinnear Estate Scholar**  
Loubna Kayssar, *Lebanon*

**Lillie A. Traver Scholar**  
Krista Dudar, *Brampton*

**Lily Bell Memorial Scholar**  
Coleen Pielechaty, *St. Catharines*

**Lubrizol of Canada Ltd. Scholar**  
Michael Burns, *Stratford*

**Mel Swart Scholar**  
Denise Elliot, *Niagara Falls*

**Partridge, Pelissero Iggulden & Company Scholar**  
Graham Greenidge, *St. Catharines*

**Peat Marwick Thorne Scholars**  
Norman Chasse, *Welland*

**Quebec and Ontario Paper Company Scholar**  
Lisa Andres, *Niagara-on-the-Lake*  
Richard Cleve, *St. Catharines*  
P. Johnny Sum, *St. Catharines*

**Rose Estate Scholars**  
Catharine Mundle, *St. Catharines*

**Rose Horne and Stevenson Insurance Agency Scholar**  
Tracy Hahn, *Waterloo*  
Lisa Kamphuis, *St. Catharines*

**Scholler Foundation Scholar**  
Hemant K. Srivastava, *St. Catharines*

**Senior Scholarship - Visual Arts**  
Geraldine Parent, *Thorold*

**Sir Isaac Brock Music Scholar**  
Stephen Ellison, *St. Catharines*

**Senior Scholarship in Music I**  
Carmelo Castiglione, *Burlington*

**Senior Scholarship in Music II**  
Stephen Ellison, *St. Catharines*

**Sophia Gampel Memorial Scholars**  
Denise Marie Elliott, *Niagara Falls*  
Peter Harris, *Niagara Falls*

**Spencer Williams Scholar**  
A. Francisa Haak, *Simcoe*

**St. Catharines Advertising and Sales Association Scholar**  
Robert DiCrosta, *St. Catharines*

**The Melvin Perlman Scholar**  
John Cairney, *St. Catharines*

**Tomarin Scholar in Marketing**  
Todd Osborne, *Burlington*

**Willmot Scholar in Administration**  
Janet Nelson, *Jordan Station*

**Wood Gundy Scholar**  
Lubna Kayssar, *Lebanon*

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**Donor Entrance Scholarship Recipients 1992**

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**C. Boyd Slemon Scholar**  
Scott Weibe, *St. Catharines*

**C. Bruce Hill Scholar**  
Franca Francassi, *Thorold*

**Dr. G. C. Shaver Scholar**  
Craig Nikiforuk, *Fonthill*

**3M Scholar in Biology**  
Kristin Heximer, *Fort Erie*

**3M Scholar in Chemistry**  
Michael Rakic, *St. Catharines*

**St. Catharines Jaycees 50th Anniversary Scholar**  
Guiseppe Castelli, *St. Catharines*

**H. H. Knoll Scholars**  
Dan Giancola, *Port Colborne*  
Jeremy Heil, *Port Colborne*  
Kristin Heximer, *Fort Erie*  
Kristi Mackechuk, *Fort Erie*

**Niagara Credit Union Scholars**  
Tyrone Nicholas, *Welland*  
Vannessa Rocca, *Welland*

**Molson CHSC Folk Arts Council Scholar**  
Clorinda Madelina, *St. Catharines*  
Jaffer Syed, *St. Catharines*

**Peat Marwick Thorne**  
Franca Francassi, *Thorold*

**QUNO Scholar**  
Scott Weibe, *St. Catharines*

## Scholarships and Awards

### St. Catharines Optimist Club Scholar

Debra Barfett, *Iona Station*

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### University Entrance Scholarship Recipients 1992

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Jennifer N. Andres,  
*Niagara-on-the-Lake*  
Allison M. Anticknap, *Tillsonburg*  
Tara C. Ariano, *St. Catharines*  
Anne E. Armstrong, *Ottawa*  
Denise Avery, *Oshawa*  
Gwyn L. Bailey, *Sudbury*  
Leah H. C. Balt, *Beamsville*  
Debra L. Barfett, *Iona Station*  
Kerri A. Barkwill, *Niagara Falls*  
David A. Bassindale, *Selkirk*  
Leanne M. Beaty, *Caistor Centre*  
Saverio M. Beltrano, *Sault Ste. Marie*  
Trena M. Bendera, *Etobicoke*  
Deborah Bennet, *Sarnia*  
Arun K. Bhatia, *St. Catharines*  
Carol Ann D. Bisson, *Welland*  
Robert C. Blacquiere, *Fonthill*  
Nick Blasutto, *Sudbury*  
Darrell Blue, *Port Robinson*  
Lisa R. Booth, *Metcalfe*  
Paula E. Bortolussi, *London*  
Michael C. Boucher, *Burlington*  
Lorna L. Bowser, *Maidstone*  
Patricia Brady, *Hamilton*  
Helen L. Brunton, *Welland*  
Cindy A. Buelow, *Trenton*  
Cindy L. Burger, *Hagersville*  
Angela C. Burns, *Colborne*  
Jodi A. Calver, *Fenwick*  
Melissa A. Candeloro, *Niagara Falls*  
Melissa A. Castle, *St. Catharines*  
Carrie I. Celli, *Sault Ste. Marie*  
Tracy D. Chappell, *Point Edward*  
Tyra Clemmens, *Scarborough*  
Jacqueline Cleverley, *St. Catharines*  
John M. Clipsham, *Fonthill*  
Julie M. Coleman, *Manotick*  
Jennifer L. Coles, *Don Mills*  
Carrie A. Contini, *St. Catharines*  
Kevin D. Conway, *St. Catharines*  
Judith E. Coombe, *Simcoe*  
Maria Costantini, *Ottawa*  
Cindy Cracknell, *Paris*  
Lisa W. Crawford, *Brantford*  
Kimberly A. Cullen, *Scarborough*  
Aimee L. Cyr, *Burlington*  
Giancarlo D'Ettoire, *Sault Ste. Marie*  
Becky L. Dakin, *Komoka*

Christy I. Davidson, *Thornhill*  
Samantha E. Derose, *Niagara Falls*  
Julie S. Devos, *Chatham*  
Jason J. Dilamarter, *Long Sault*  
Nina Dileo, *St. Catharines*  
Frances Dipietro, *St. Catharines*  
Nina Dipietro, *Niagara Falls*  
Jennifer Dommasch, *Niagara Falls*  
Johannes N. Doodeman, *St. Catharines*  
Sophia Y. Dore, *St. Catharines*  
Kristyn J. Duckett, *Leamington*  
Gregory Dumele, *Niagara Falls*  
Sherri A. Durst, *Fenwick*  
Mark F. Eady, *St. Catharines*  
Mario Falvo, *Welland*  
Lee-Anne C. Fenton, *Terrace Bay*  
Mary Ferraro, *Stoney Creek*  
Michael G. Ferreira,  
*Niagara-On-The-Lake*  
Franca Fracassi, *Thorold*  
Kim L. Freeman, *St. Jacobs*  
Lorraine D. Fulcher, *St. Catharines*  
Nadine M. Furbacher, *Fonthill*  
Nicole D. Gagne, *Mooretown*  
Jennifer Gallagher, *Hamilton*  
Samuel Gamble, *Manotick*  
Danny Giancola, *Port Colborne*  
Jason P. Gibbs, *Ajax*  
Melanie A. Goebel, *Sarnia*  
Michael W. Goslin, *Fonthill*  
Jason R. Gouin, *London*  
Juli P. Green, *Fonthill*  
Lisa K. Greenidge, *Sudbury*  
Sacha S. Grischow, *Cambridge*  
Sarah A. Groom, *London*  
Joanna M. Gueldenstube,  
*St. Catharines*  
Kimberley A. Guindon, *Brantford*  
Kathy Hadjannakis, *St. Catharines*  
Jennifer S. Hamilton, *Hanover*  
Anna M. Haras, *Fenwick*  
Sheri P. Harrison, *Essex*  
Tara Harte, *St. Catharines*  
Jeremy M. Heil, *Port Colborne*  
Kristin Heximer, *Fort Erie*  
Robert A. Hildebrandt, *Fonthill*  
Kevin A. Holder, *Dorion*  
Stacey F. Holmes, *St. Catharines*  
Tammy C. Howard, *London*  
Lori L. Huycke, *Corbyville*  
Luciano A. Ieraci, *Niagara Falls*  
Elizabeth I. Ilnicki, *St. Catharines*  
Salvatore Iodice, *St. Catharines*  
Maryann Katkic, *Hamilton*  
Mark Kellershohn, *Niagara Falls*  
Brian C. Kerr, *Bobcaygeon*  
Deanna Killins, *Smithville*  
Kathy Kong, *Mississauga*

Brian R. Kormos, *Fonthill*  
Emilia Kovacs, *Welland*  
John Kucharic, *St. Catharines*  
Sandra C. Kuharski, *Essex*  
Nancy Kydd, *Sunderland*  
Tara K. Kydd, *Newmarket*  
Danielle L. LaRue, *Haliburton*  
Carol-Ann Lawrence, *Welland*  
Deena LeClair, *Kanata*  
Heidi A. Leingartner, *St. Catharines*  
Daniel L. Leone, *St. Catharines*  
Kelly A. Liachomsky, *St. Catharines*  
Bryan D. Lillycrop, *Lynden*  
Jerome Loewen, *St. Catharines*  
Carrie L. Ludington, *Barrie*  
Julie R. MacCauley, *Toronto*  
Krista L. Mackechuk, *Fort Erie*  
Heather K. MacLean, *Burlington*  
Heather C. MacRae, *Ridgeville*  
Clorinda Maddalena, *Thorold*  
Tina T. M. Mandal, *Sudbury*  
Christa E. Marath, *St. Thomas*  
Nicholas Mathieu, *St. Catharines*  
Bradley J. Mayhew, *St. Catharines*  
Bonnie McDermid, *Beamsville*  
Nicole K. McFadden, *Cloyne*  
Danielle McNaughton, *Scarborough*  
James R. McNaughton, *St. Catharines*  
Heather A. Metselaar, *Sarnia*  
Peter J. Misek, *Vineland*  
Cheryl B. Mitchell, *Hamilton*  
Jamieson Mitchell, *Brampton*  
Nick Montecchia, *Hamilton*  
Jennifer L. Monteith, *Port Stanley*  
Tracey L. Moore, *Georgetown*  
Paul R. Morris, *St. Catharines*  
Karen Morrow, *St. Catharines*  
Shannon Mulhern, *Oakville*  
Richard G. Munderich, *Port Robinson*  
Miquel Munoz, *Stevensville*  
John G. Murdoch, *Niagara Falls*  
Craig W. Nagel, *Stevensville*  
Ryan Nevestuk, *St. Catharines*  
May V. Nguyen, *Brampton*  
Tyrone Nicholas, *Welland*  
Teresa Nicotera, *Welland*  
Craig A. Nikiforuk, *Fonthill*  
Alexander S. Novakovic, *Hamilton*  
David P. O'Rourke, *St. Catharines*  
Tricia Oprzedek, *St. Catharines*  
Christine Overduin, *Jordan Station*  
Robyn L. Oxtobee, *Brockville*  
Marinella S. Pamfili, *St. Catharines*  
Hilary K. Paul, *Niagara Falls*  
Vanessa L. Pell, *Hannon*  
Ann Marie Perry, *Union*  
Michael A. Pestowka, *Wallaceburg*  
Lisa Pibworth, *Scarborough*

Virginia Piscitelli, *Thorold*  
 Melissa A. Pleva, *Kingsville*  
 Katherine M. Plumers, *Cottam*  
 Sherrie M. Pooler, *Niagara Falls*  
 Kristy M. Prescott, *Thorold*  
 Graham J. Purcell, *Branford*  
 Stacey L. Putman, *St. Catharines*  
 Jeremy J. Putnins, *Grimby*  
 Andrea D. Quinn, *Burlington*  
 Jennifer F. Quist, *St. Catharines*  
 Michael Rakic, *St. Catharines*  
 Tracy A. Rehberg, *Georgetown*  
 April Relic, *Newmarket*  
 Wendy C. Robinson, *Campan*  
 Rebecca H. Rocca, *Welland*  
 Vanessa A. Rocca, *Welland*  
 Kimberly P. Roos, *Brampton*  
 Julie A. Rougoor, *Niagara-on-the-Lake*  
 Katherine A. Ryan, *Port Colborne*  
 Laura Sakes, *Grimby*  
 Tara-Lynn Scheffel, *Beamsville*  
 Tracy K. Schiemann, *Eganville*  
 Gregory M. Schmid, *Burlington*  
 Heidi S. Schneider, *Milverton*  
 Dean Serravalle, *Thorold*  
 Kavika Sharma, *Brampton*  
 Tayarna Shiner, *Fort Erie*  
 Jennifer M. Sims, *St. Thomas*  
 Navneet Singh, *Maple*  
 Charles E. A. Smith, *Havelock*  
 Robyn Smith, *Kanata*  
 Heidi Sobol, *Niagara Falls*  
 Richard D. Stark, *Fonthill*  
 Craig Steger, *Welland*  
 Kimberley J. Sutherland, *Chatham*  
 Jaffer A. Syed, *St. Catharines*  
 Coryn C. Telfer, *Chatham*  
 Andrea D. Tirone, *Ridgeville*  
 Janene J. Tischart, *St. Jacobs*  
 Robin A. Tonnies, *Welland*  
 Wanda E. Trottier, *St. Catharines*  
 Jennifer J. Tyndall, *Clinton*  
 Kyle T. Upton, *Newmarket*  
 Shawna Urquhart, *Brampton*  
 Robert D. Vandenberg, *St. Catharines*  
 Angela Vandermeij, *Prescott*  
 Kimberly J. Vandervoort, *Stirling*  
 Corry R. Van Nispen, *Barrie*  
 Petronella C. Vanwoerden, *Norwich*  
 Giancarlo Vetrone, *Niagara Falls*  
 Melissa J. Volekaert, *Aylmer*  
 Nicole D. Walker, *Unionville*  
 Dana E. Waszynski, *St. Catharines*  
 Leah G. Weerheim, *St. Catharines*  
 Lisa D. Welsh, *Burlington*  
 Joanna M. Whissell, *Sherkston*  
 Scott C. Wiebe, *St. Catharines*  
 Kimberly D. Wiens,  
*Niagara-on-the-Lake*

Jennifer M. Windjack, *Sarnia*  
 Susan Zakowski, *Niagara Falls*  
 Alison L. Zalepa, *Niagara-on-the-Lake*  
 Todd Zavitz, *Cayuga*  
 Ketherine L. Zito, *Scarborough*

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### Canada Scholars

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Leanne Beaty, *Caistor Centre*  
 Daniel Berhe, *St. Catharines*  
 Carol Ann Bisson, *Welland*  
 Rhea Brillinger, *Listowel*  
 Rosemary Caltagirone, *Stoney Creek*  
 Carrie Celli, *Sault Ste. Marie*  
 Richard Cleve, *St. Catharines*  
 Maria Constantini, *Ottawa*  
 Kevin Conway, *St. Catharines*  
 Anthony Crocco, *Niagara Falls*  
 Nina DiLeo, *St. Catharines*  
 Jennifer Dommasch, *Niagara Falls*  
 Sophia Dore, *St. Catharines*  
 Marvin Franz, *Niagara-on-the-Lake*  
 Paul Grebenc, *St. Catharines*  
 Kristin Heximer, *Fort Erie*  
 Luciano Ieraci, *Niagara Falls*  
 Jennifer Ilnicki, *St. Catharines*  
 Salvatore Iodice, *St. Catharines*  
 Mark Kellershohn, *Niagara Falls*  
 Pamela Klassen, *St. Catharines*  
 Randy Koop, *St. Catharines*  
 Brian Kormos, *Fonthill*  
 Jeffery Kormos, *Fonthill*  
 Andrew Lang, *St. Catharines*  
 Jerome Loewen, *St. Catharines*  
 Jane Marshall, *St. Catharines*  
 Janet Matthews, *Welland*  
 Laura Morgan, *Thorold*  
 Jennifer Mueller, *Welland*  
 Gord Murdoch, *Niagara Falls*  
 Tyrone Nicholas, *Welland*  
 Maria Pacecca, *St. Catharines*  
 Brian Palujanskas, *Walkerton*  
 Amy Peaire, *St. Catharines*  
 Karen Poole, *Lambeth-Westminister*  
 Kristy Prescott, *Thorold*  
 Glenn Raake, *Niagara-on-the-Lake*  
 Michael Rakic, *St. Catharines*  
 John-David Ross, *Stratford*  
 Kerrie Rusk, *Niagara Falls*  
 Kate Sanderson, *London*  
 Enrico Schirru, *Welland*  
 Tracy Snyders, *Belmont*  
 Hemant Srivastava, *St. Catharines*  
 Meena Srivastava, *St. Catharines*  
 Craig Steger, *Welland*

Valerie Studerus, *Lucan*  
 Jaffer Syed, *St. Catharines*  
 Lynne Toye, *St. Catharines*  
 Mackenzie Troyer, *Tillsonburg*  
 Leah Weerheim, *St. Catharines*  
 Scott Weibe, *St. Catharines*

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### Scholarships

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Students need not apply for scholarships administered by the University unless otherwise indicated. Scholarships and awards are allocated at the discretion of the Brock University Senate Committee on Awards and Bursaries. In order to ensure equitable distribution of funds, the Committee reserves the right to limit the cumulative monetary value of scholarships and awards that any one student may receive.

Normally, to be eligible for other than an entrance scholarship, a student must be presently registered full-time at Brock and have successfully completed five or more credits in the previous Fall/Winter Session. Awards based on donations cannot be guaranteed by the University and can only be forwarded after the funds have been received from the donor. A student who withdraws from the University will not receive a refund for that part of tuition fees paid out of scholarship monies.

Please note: An asterisk (\*) appears beside the value of an endowed scholarship. The figure shown is the amount awarded last year. The value will vary from year-to-year depending upon income earned by the endowment.

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### Entrance scholarships

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All applicants, who have not previously attended a post-secondary institution and who apply for full-time study at the University on the basis of an O.S.S.D., are automatically considered for entrance scholarships. Entrance scholarships are awarded on the basis of the six OAC's used to establish the student's admission average and are subject to the availability of funds.



## Scholarships and Awards

The minimum average required for the award of a scholarship is determined each year by the Senate Committee on Awards and Bursaries. Notification of an award is made together with the offer of admission.

Awarded to incoming first-year students with the highest averages:

**C. Boyd Slemon Scholarship**  
**C. Bruce Hill Scholarship**  
**Dr. G. C. Shaver Scholarship**

**Brock University Founders' Scholarships**  
**Brock University Admission Scholarships**

### 3M Scholarships

Value: \$500. each. Two scholarships; one to be awarded to the student with the highest average entering a biology program; one to be awarded to the student with the highest average entering a chemistry program.  
Donor: 3M Canada Inc.  
Established: 1992

### The Bluma Appel Scholarship in Health Studies

Value: \$1000\*. Awarded to the student with the highest academic standing accepted into the first year of the Health Studies program.  
Donor: Mr. Bram Appel  
Established: 1991  
Endowed: 1991

### The St. Catharines Jaycees 50th Anniversary Scholarship

Value: \$500. To be awarded to an outstanding student who is entering the first year of the honors Bachelor of Business Administration degree program and who is a permanent resident of St. Catharines.  
Donor: St. Catharines Jaycees  
Established: 1989  
Endowed: 1989

### H. H. Knoll Scholarships

Value: \$1000 each.  
To be awarded to students entering undergraduate programs who are graduates of secondary schools in the Niagara region. Preference given to students from the greater Port Colborne area (graduates of Lakeshore Catholic High School and

Port Colborne High School)  
Donor: The Family of H. H. Knoll  
Established: 1989  
Endowed: 1989

### Niagara Credit Union Scholarships

Value: \$500. each. To be awarded to two outstanding students who are graduates of secondary schools in the Niagara Region and who are taking an undergraduate degree program.  
Donor: Niagara Credit Union  
Established: 1989

### Molson - CHSC - Folk Arts Council Scholarship

Value: \$650\*. To be awarded to a student(s) entering university from a St. Catharines high school.  
Established: 1987  
Endowed: 1987

### Peat Marwick Thorne Entrance Scholarship

Values: \$800\*. An entrance scholarship will be awarded to a student from the Niagara Region with the highest academic standing entering the Co-op Accounting program.  
Donor: Peat Marwick Thorne Chartered Accountants  
Established: 1990  
Endowed: 1990

### QUNO Scholarship

Value: \$3000. \$900 to be awarded in the first year, \$700 in each of the three remaining years to outstanding full-time students who are graduates of Niagara regional high schools and are presently taking an undergraduate degree program.  
Donor: The QUNO Corporation  
Established: 1967

### St. Catharines Optimist Club Scholarship

Value: \$250. To be awarded to an outstanding student entering an undergraduate program at the discretion of the Senate.  
Donor: St. Catharines Optimist Club  
Established: 1992

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## Canada scholarships

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A national scholarship program intended to recognize outstanding students and to encourage them to pursue undergraduate studies in natural sciences and related areas. At least half of the awards are made to women. Applications should be made through the Scholarships Officer by students who will enrol in first-year programs leading to a BSc degree. These scholarships may be renewed up to three times on condition that a first-class academic standing is maintained.

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## In-course scholarships

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To be considered for Brock in-course scholarships and a number of donor in-course scholarships, full-time students must normally have completed five credits or more in the previous Fall/Winter Session with a minimum overall average of 80 percent. The minimum average required for the award of an in-course scholarship is determined each year by the Senate Committee on Awards and Bursaries.

Brock in-course scholarships are also made available through the generosity of the following: Findley Estate, Gardiner Estate, Kinnear Estate and the Rose Estate.

### 25th Anniversary Scholarships

Value: \$1000. Awarded to the top students in each faculty returning to full time studies for their fourth (honors) year. There is one award for each of the faculties of Business, Humanities, Mathematics and Science, Physical Education and Recreation, and Social Sciences.  
Donor: Faculty and Staff of Brock University.

### Alumni Scholarships

Value: \$5000\*. To be awarded at the discretion of Senate to students with records of academic excellence.  
Donor: Brock University Alumni Association  
Established: 1985

**The Lily Bell Memorial Award for English**

Value: \$250. To be awarded to the most deserving female student in second- or third-year English.

Donor: Canadian Federation of University Women, St. Catharines Chapter  
Established: 1974

**J.P. Bickell Foundation Scholarship**

Value: \$3500. Payable \$1000 in the second-, third- and fourth-year. To be awarded to an outstanding student majoring in Geological Sciences. The scholar must have obtained an average of 75 percent or better at the end of his or her first year and must maintain this average throughout the subsequent years of the program or relinquish the scholarship.

Donor: The J.P. Bickell Foundation, Trustees, National Trust  
Established: 1968

**Birks Family Foundation Scholarship**

Value: \$750\*. To be awarded to outstanding students at the discretion of Senate.

Donor: Birks Family Foundation  
Established: 1968  
Endowed: 1968

**Raffaele DeLuca Memorial Scholarship**

Value: \$600\*. To be awarded annually to a student of Italian language on the basis of a distinguished scholastic performance.

Donor: Friends of the late Professor  
Established: 1984  
Endowed: 1984

**Joseph Dennis Scholarship in Italian**

Value: \$500. To be awarded to a first-, second- or third-year student in Italian on the basis of a distinguished scholastic performance.

Donor: The Grand Lodge of the Order Sons of Italy of Ontario  
Established: 1975

**Dr. Alan Earp Alumni Scholarship**

Value: minimum \$500. To be awarded at the discretion of Senate to a student with a record of academic excellence.

Donor: Brock University Alumni Association  
Established: 1988

**Faculty and Staff Club Scholarships**

Value: to be determined. To be awarded to part-time students (including part-time graduate students) on the basis of academic excellence at the discretion of the Senate Committee on Awards.

Donor: Brock University Faculty and Staff Club  
Established: 1980

**Sophia Gampel Memorial Scholarships**

Value: \$700\*. To be divided between two eligible students from the city of Niagara Falls, Ontario.

Donor: Mr. Abraham Gampel  
Established: 1970  
Endowed: 1970

**George Head Memorial Scholarship**

Value: \$200. To a student majoring in Business Administration who demonstrates superior ability.

Donor: Purchasing Management Association of Canada  
Established: 1973

**Club Heidelberg Scholarship**

Value: \$200. To be awarded to the top student in the department of Germanic and Slavic Studies pursuing studies in the German language and literature or in the German area studies program, entering second-, third- or fourth-year.

Donor: The St. Catharines Heidelberg Women's Auxiliary  
Established: 1965

**Aileen Hood Memorial Scholarship**

Value: \$300\*. To be awarded to a student of superior ability entering fourth-year and majoring in Physical Education.

Donor: Aileen Hood Estate  
Established: 1982  
Endowed: 1982

**Sir Isaac Brock Music Scholarship**

Value: \$700. To be awarded to a student majoring in Music entering third- or fourth-year who has the highest session average.

Established: 1990  
Endowed: 1990

**Lubrizol of Canada Ltd. Scholarship**

Value: \$1000\*. To be awarded to a student of honors standing in the second-, third- or fourth-year, majoring in Physics.

Donor: Lubrizol of Canada Ltd.  
Established: 1971  
Endowed: 1971

**P.M. Magruder Memorial Scholarship**

Value: \$600. To be awarded to a third- or fourth-year student in Chemistry. Students taking a combined or interdepartmental major degree are also eligible.

Donor: Anonymous  
Established: 1973  
Endowed: 1973

**Gertrude Millward Scholarship**

Value: \$200 annually. To be awarded to a student in the Faculty of Humanities for outstanding performance.

Donor: Earl Mountbatten Chapter, IODE  
Established: 1977

**Senior Scholarship in Music I**

Value: \$300\*. To be awarded to a second-year student with the highest average marks in Music courses entering a third-year BA major in Music.

Donor: Dr. and Mrs. J. A. Gibson  
Established: 1975  
Endowed: 1981

**Senior Scholarship in Music II**

Value: \$300\*. To be awarded to a student of distinguished musical achievement entering the final year of a degree program with a major in Music.

Donor: Dr. and Mrs. J. A. Gibson  
Established: 1986  
Endowed: 1986

**W. G. Ormsby Memorial Scholarship**

Value: \$300\*. To be awarded annually to the student with the highest average in a single or combined major in history entering third or fourth year.

Established: 1987  
Endowed: 1987

**The Melvin Perlman Scholarship**

Value: \$400\*. To be awarded annually to the student with the highest average and with a major in Sociology. The scholarship is in memory of the substantial contribution Professor Perlman

## Scholarships and Awards

made to the University during his years of teaching at Brock.

Donors: The Family and Friends of Dr. Melvin L. Perlman

Established: 1988

Endowed: 1991

### **Partridge Pelissero Iggulden & Company Scholarship**

Value: \$250. To be awarded to a full-time student enrolled in the Business Administration program, who has obtained the highest overall standing at the end of the second-year and who has chosen to enrol in the third-year Accounting option.

Donor: Partridge Pelissero Iggulden & Company, Chartered Accountants  
Established: 1971

### **Peat Marwick Thorne In-course Scholarship**

Values: \$800\*. Awarded to the Co-op Accounting student with the highest academic standing after completing the first-year of the program.

Donor: Peat Marwick Thorne Chartered Accountants  
Established: 1990  
Endowed: 1991

### **Club Rheingold of Welland Scholarships**

Value: \$300. To be divided between the two top students in German, at the beginning of their third-year, on the basis of their performance in second-year.

Donor: Club Rheingold of Welland  
Established: 1968

### **Rogers Communications Inc. Scholarship**

Value: \$500. To be awarded to the student with the highest academic average entering fourth year in Communication Studies.

Donor: Rogers Communications Inc.  
Established: 1993

### **Rose, Horne & Stevenson Insurance Agency Scholarship**

Value: \$200. To be divided between two students of superior ability.

Donor: Rose, Horne & Stevenson Insurance Agency Ltd.  
Established: 1970

### **Scholler Foundation Scholarship**

Value: \$1750\*. To be awarded to a student of honors standing majoring in Chemistry.

Donor: Scholler Foundation  
Established: 1973  
Endowed: 1973

### **St. Catharines Advertising and Sales Association Scholarship**

Value: To be determined. To be awarded to an outstanding student who is entering the fourth-year of the Marketing stream of the honors Bachelor of Business Administration degree and who is a permanent resident of St. Catharines.

Established: 1989

### **Mel Swart Scholarship**

Value: \$800\*. To be awarded annually to a senior student with a single major in Politics. The scholarship honors Mel Swart's forty years of service at the municipal, regional and provincial levels of government, including thirteen years as M.P.P. for the Welland-Thorold riding.

Donor: Friends of Mel Swart  
Established: 1988  
Endowed: 1988

### **Gordon V. Thompson Scholarship in Music**

Value: \$100. To be awarded to the student with the highest average in music courses in the first-year of a single or combined major in Music.

Donor: Mr. Gordon V. Thompson  
Established: 1973

### **Tomarin Scholarship in Marketing**

Value: \$500\*. To be awarded to the student with the highest academic standing entering the fourth-year Marketing stream in the BBA program.

Donor: Harry Tomarin, Seymour Tomarin  
Established: 1989  
Endowed: 1989

### **Lillie A. Traver Scholarship**

Value: \$200\*. To be awarded to a student of honors standing majoring in History.

Donor: Miss Lillie A. Traver  
Established: 1976  
Endowed: 1976

### **Senior Scholarship in Visual Arts**

Value: \$300\* To be awarded to a second- or third- year student with high academic standing and distinguished artistic achievement entering a third- or fourth-year program in Visual Arts.

Donor: Dr. James A. Gibson  
Established: 1988

### **The Spencer Williams Scholarship**

Value: \$825\*. To be awarded to an outstanding student in the Faculty of Physical Education.

Donor: The Rotary Club of St. Catharines South  
Established: 1973  
Endowed: 1973

### **Willmot Scholarship in Administration**

Value: \$500. To be awarded annually to an outstanding student majoring in Business Administration.

Donor: Mr. D.G. Willmot  
Established: 1972

### **Wood Gundy Scholarship**

Value: \$475\*. To be awarded to students of superior ability.

Donor: Wood Gundy Securities Limited  
Established: 1970  
Endowed: 1970

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## Prizes

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Departmental prizes are awarded for excellence in a particular area of study. No application is required; selection and award is made by the department.

### *Business Administration*

#### **Faculty of Business Book Prize**

A book prize awarded to a student or students of outstanding academic achievement in year 4 of a Business Administration program.

#### **John Edds Prize in Accounting**

To be awarded to the graduating student in the Faculty of Business with the highest average in accounting courses prescribed for Accounting majors.

Donor: Mr. J.A. Edds  
Established: 1986

**Financial Executive Institute Award**

An annual award of \$500 to a graduating student of any honors accounting program, who, in the judgment of faculty, has displayed outstanding achievement in finance and accounting.

Donor: Financial Executive Institute, Hamilton Chapter  
Established: 1991

**Maurice Perkins Medal**

A Gold Medal and an award of \$200 to be awarded to the graduating student in the Faculty of Business with the highest academic standing in accordance with the standards used in awarding their faculty medal.

Donor: Dr. Maurice F. Perkins  
Established: 1977

*Biological Sciences***Biology Faculty Book Prizes**

Book prizes are given annually to the student achieving the highest grade in BIOL 1F90, to the second- and third-year students receiving the highest marks in biology courses and to the fourth-year graduating honors students with the best overall record in biology.

*Chemistry***Blema Miller Book Prize**

An award to a Chemistry major or combined major student with the highest standing in second year.

Donors: Professors Mary Jane Miller and Jack Martin Miller  
Established: 1992

**E. A. Cherniak Founders Prize in Chemistry**

Value: \$150. An annual award to the best third- or fourth- year Chemistry major or combined major.

Donor: Faculty and Staff, Department of Chemistry  
Established: 1993  
Endowed: 1993

**The Chemical Institute of Canada Prize**

A silver medal, Institute book plates and \$25 awarded to the student with the highest standing in the penultimate year of the

honors Chemistry program.

Donor: Chemical Institute of Canada  
Established: 1967

**Society of Chemical Industry Merit Award**

A medal and \$50 awarded to the honors Chemistry student with the highest standing in the graduating class. In addition, the student must have obtained a minimum average of 75 percent in his or her final year and have completed the course in four years.

Donor: Society of Chemical Industry  
Established: 1967

**Chemical Rubber Company Book Prize**

A book prize awarded annually to the best first-year student in Chemistry.

Established: 1964

**Demonstrator of the Year Award**

Value: \$400. An annual award to the best chemistry lab demonstrator or senior demonstrator. Nominations must be supported by student evaluations. May be awarded only once to any given individual.

Donor: Prof. Mary Frances Richardson  
Established: 1993  
Endowed: 1993

*Child Studies***Child Studies Book Prizes**

Awarded to the graduating students with the highest major averages in the pass and honors Child Studies programs; the graduating student with the highest overall average in the BA/BEEd(Child Studies) program; the graduating students with the most outstanding extracurricular contribution to Child Studies.

*Child Studies/Education***Kimberly Wells Memorial Book Prize**

Awarded to a student graduating from the BA/BEEd child studies program, who has displays strength in academic and participation in the University community.

Donors: The Family and Friends of Kimberly Wells  
Established: 1992  
Endowed: 1992

*Classics***Marilyn Atamian Memorial Book Prize in Classics**

A book prize awarded annually to the continuing education student who graduates with the highest average in Classics.

Donors: Colleagues of Marilyn Atamian in the Lincoln County Board of Education  
Established: 1981

**Department of Classics Book Prize**

A book prize awarded to a graduating student for high standing in Classics.

Established: 1972

**Department of Classics Book Prize in Greek**

A book prize awarded to a graduating student for high standing in Greek.

Established: 1972

**Department of Classics Book Prize in Latin**

A book prize awarded to a graduating student for high standing in Latin.

Established: 1972

*Computer Science and Information Processing***Department of Computer Science and Information Processing Book Prize**

Two book prizes to be awarded to second- and third-year students, having the highest marks in computer science courses.

Established: 1981

**Digital Equipment of Canada Ltd. Award of Merit**

Value: \$200 and medal to be awarded to the top honors student graduating in Computer Science and Information Processing.

**Sassoon Cohen Prize**

Two book prizes to be awarded to outstanding students in the first- and second-year computer science programs.

*English Language and Literature***English Department Book Prize**

A book prize to a student or students of

## Scholarships and Awards

outstanding academic achievement in English for years 3 and 4.

### **The Carole LaMothe Memorial English Essay Prize**

To be awarded for the best essay submitted as part of the required workload in any English or Drama/English course during the academic year. Any entry must be submitted to the competition by the student.

Donors: Department of English and friends of Carole LaMothe  
Established: 1981-82

### **Freshman English Essay Prize**

Value: \$75. To be awarded for the best essay submitted as part of the required workload in ENGL 1F91 or 1F99. Any entry must be submitted to the competition by the student.

Donor: Department of English  
Established: 1981-82

## *Film Studies, Dramatic and Visual Arts*

### **Amadeus Book Prize**

An annual award in commemoration of the 200th anniversary of Mozart's death. Alternating between the Theatre program and the Music department, this award will be presented at Fall Convocation to the graduating student with a strong university record in performance and a high academic standing.

Established: 1993

### **The F. Janet Dolman Prize in Playwrighting**

To be awarded to a student or students who show outstanding promise in playwrighting.

Established: 1989

### **The M.E. and L.E. Miller Prize in Drama and Theatre Arts**

Awarded to the student who achieves the highest standing in DRAM 1F93 and THEA 1F99.

Established: 1971

### **Dr. Marion B. Smith Prize in Fine Arts**

For excellence over three- or four- years standing in fine arts courses.

Established: 1976

### **The Jane Forrest Prize in Dramatic and Theatre Arts**

Awarded to the student who excels in year two theatre courses.

Established: 1979

### **Jean Harding Prize for Festival Achievement**

A book prize awarded annually to the student judged to have made the most outstanding contribution to the spring festival of the Department of Film Studies, Dramatic and Visual Arts.

### **The J.H. and J.F. Harding Prize in Dramatic Literature and Theatre**

Awarded for excellence over three- or four- years in dramatic literature courses.

Established: 1977

### **L. Amy Kerr Book Prize**

To be awarded at the discretion of the department to a student in any year who has displayed strength in academics and participation in the university community.

Established: 1992

### **The A. Miller and N. Mabee Prize**

Awarded to the student who achieves the highest standing in year 4 honors Dramatic Literature or Theatre or a combined Dram/Thea honors degree.

Established: 1989

### **The Anne Perozuk Book Prize in Critical Writing**

Granted annually for excellence in an essay submitted by a student in a second- or third year level film course. Consult the department for details.

Donor: Mrs. Joan Nicks

Established: 1993

Endowed: 1993

### **The Sylvia Osterbind Prize in Art History**

A book prize awarded annually to the student with the highest standing in art history.

Established: 1989

### **The Sam and Sophie Yacowar Memorial Prize in Film Studies**

To be awarded annually to the Film Studies major or combined major with the highest standing in two or more film courses in third- or fourth-year.

Established: 1989

### **Visa Faculty Award**

Awarded to the student who has shown excellence over 3 or 4 years of study in studio and/or art history.

## *French, Italian and Spanish*

### **Book Prize of the French Consul-General, Toronto**

A book prize to be awarded to an outstanding student in French.

Donor: Consul-General de France

Established: 1965

### **Andres Bello Prize (Latin-American Studies)**

A book prize awarded to a student whose work in Latin-American studies has been of particular distinction.

Established: 1971

### **Brock Community Italian Prize**

Approximately \$400. Awarded to the most outstanding student taking Italian as a major or combined major, in any year.

Donor: The division of Italian and the Italian Club of Brock University

### **Prize of the Ambassador of Switzerland to Canada**

A book prize awarded to students who obtained the highest standing in French.

Donor: Ambassador of Switzerland to Canada

Established: 1966

### **Davies Prizes in Modern Languages**

Awarded annually to a graduating student in recognition of high academic achievement in each of French, German, Italian, Russian and Spanish.

## *Geography*

### **Canadian Association of Geographers Book Prize**

This prize is awarded annually to the best graduating student in the fourth- year honors program of the Department of Geography.

Donor: Canadian Association of Geographers

Established: 1967

**Department of Geography Year 3 Book Prize**

To be awarded to a year 3 student in Geography in recognition of both high academic achievement and contribution to the University community.

Donor: Department of Geography  
Established: 1986

**Department of Geography Graduating Prize**

A prize of geographical books or equipment. To the student in honors Geography who attained the highest average in third- and fourth-year Geography. This award may be given to the winner of the Canadian Association of Geographers Book Prize.

**John N. Jackson Prizes in Human Geography**

Four awards, valued at \$150 each. Awarded annually to B.A. students in Geography or Human Geography on the basis of high quality performance in a course assignment in a second or third year Human Geography course which may be taken for B.A. credit.

Donor: Mr. & Mrs. John N. Jackson  
Established: 1992

**Geological Sciences****The Canadian Society of Petroleum Geologists Book Prize**

Awarded to the best undergraduate student in a petroleum related field, usually year 4 honors level.

**Canadian Society of Petroleum Geologists Student-Industry Field Trip**

A prize of a one-week field trip to Calgary for the best third-year student in "soft-rock" geology.

**The Edhorn Prize in Paleontology**

Prize: \$100. Awarded to the full-time student gaining the highest grade in a first course in paleontology.  
Established: 1985-86

**Geology Award**

Value: to be determined.  
To be awarded by the Department of Geological Sciences to students with the highest average in second, third or fourth year Geology.

**The Geological Association of Canada Book Prize**

Awarded to the best year 3 student in Geological Sciences

**Geological Association of Canada Thesis Prize, Structural Geology Division**

A national competition for the best thesis based primarily on structural geology or tectonics. The department will submit theses to the Faculty.

**The Getty Mines Prize in Economic Geology**

Prize: \$100. Awarded to the full-time student gaining the highest grade in a first course in economic geology.  
Established: 1985-86

**Mineralogical Association of Canada Book Prize**

Membership in the M.A.C. and a subscription to *Canadian Mineralogist* to be awarded annually to the student gaining the highest grade in a first course in mineralogy.

**Peter Peach Memorial Award**

Awarded to the student with the highest mark at field camp - GEOL 3P90.

**Walker Brothers Award**

Value \$500. To be awarded to a student in second-, third- or fourth-year majoring in Geological Sciences, on the basis of academic excellence and need.  
Established: 1988

**Germanic and Slavic Studies****German Embassy Book Prize**

Awarded to the top student in each course offered by the German division of the department of Germanic and Slavic Studies.

Donor: German Embassy  
Established: 1967

**The Joyce Lucey Prize**

Value: to be determined.  
Awarded to an outstanding student majoring in German or Russian in the Department of Germanic and Slavic Studies.

Donor: Friends of the late Mrs. Joyce Lucey  
Established: 1989

**Prize of the Ambassador of Switzerland to Canada**

A book prize awarded to students who obtained the highest standing in German.  
Donor: Ambassador of Switzerland to Canada  
Established: 1966

**Prize of the Embassy of Austria**

A book prize to a student or students of outstanding academic achievement in German.  
Donor: Austrian Embassy  
Established: 1970

**Royal Netherlands Embassy Book Prize**

Awarded to the top student in Dutch courses.  
Donor: Royal Netherlands Embassy  
Established: 1991

**History****The Donald G. Creighton Prize in History**

Value: \$100. To be awarded to the student obtaining the highest mark in a first-year history course.  
Established: 1966

**The Donald Goodspeed Book Prize**

To be awarded to the student achieving the highest academic standing in HIST 1F95.

**Department of History Book Prizes**

Four book prizes, to be awarded to outstanding students of history in each of year 1 through 4.

**John M. McEwen Book Prize in British History**

Awarded annually to the student who excels in British History at the second-, third- or fourth-year level.  
Donor: Prof. John M. McEwen  
Established: 1991

**Mathematics****John and Rosslyn Reed Prizes**

For students who show outstanding proficiency in mathematics.  
Established: 1968

## Scholarships and Awards

### **J. W. Reed Book Prizes in Mathematics**

Two book prizes, to be awarded to first-class honors students, one female and one male, who are graduating in Mathematics.

Donor: J. W. Reed

Established: 1991

### **Music**

#### **Robert B. Pritchard Prize in Music**

Book Prize to be awarded to a Music major in recognition of an outstanding contribution to the musical life of the University.

#### **Ronald Tremain Prize in Music Composition**

To be awarded to a Music major who shows outstanding achievement and potential as a composer.

### **Philosophy**

#### **Affleck Memorial Prize in Philosophy**

Approximately \$50 awarded to an outstanding fourth-year honors student on the basis of his or her whole record with the Department of Philosophy.

Donors: Relatives and Friends of the late Mrs. Rheta Affleck

Established: 1972

#### **Brock Philosophical Society Scholarship**

Value: \$500. To be awarded to the full-time undergraduate Philosophy major obtaining the highest standing in at least three philosophy courses.

Donor: Brock Philosophical Society

Established: 1985

#### **The Paul Seligman Memorial Book Prize in Philosophy**

To be awarded to the part-time student graduating with the highest overall average from a three- or four-year program.

### **Physics**

#### **Physics Book Prize**

To be awarded to one or more students

### **Politics**

#### **James A. Gibson Book Prize in Politics**

Value: to be determined. To be awarded to an honors student in or entering, the senior year who has an outstanding scholarly records, intends to pursue graduate study and is active in the life of the University.

Donors: Friends and Colleagues of the president emeritus on the occasion of his 80th birthday

Established: 1992

#### **Politics Book Prizes**

Three book prizes to be awarded to the best students entering second-, third- and fourth-year Politics programs.

Established: 1966

### **Psychology**

#### **The Cara Chefurka Memorial Book Prizes:**

Awarded to students with the highest graduating averages in pass and honors Psychology at Spring and Fall Convocations.

Established: 1990.

#### **Psychology 3F40 Prize**

Awarded to the PSYC 3F40 student with the most outstanding research project.

### **Sociology**

#### **P.A. Sorokin Book Prize in Sociology**

A book prize valued at \$50 is normally awarded to a fourth-year graduating student in Sociology whose thesis or class project as well as general academic performance is judged by the faculty to be outstanding.

### **Urban and Environmental Studies**

#### **Urban and Environmental Studies award**

Value: to be determined.

To be awarded to third or fourth year students in Urban and Environmental Studies.

Donor: Anonymous

Established: 1967

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### **Other awards**

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#### **Badger Award**

Value: to be determined. To be granted annually to one or two graduands who have contributed most to the extra-curricular life of the University and have maintained a satisfactory academic standing. To be awarded at the Spring Convocation only.

Established: 1980

#### **Rosalind (Hyman) Blauer Award**

Value: to be determined. To be awarded annually to members of the Brock Community (students, staff or faculty) engaged in activities which illuminate, research, bring attention to, or improve the position of women in contemporary society. Applications or nominations should be directed to the Director of Women's Studies. The award is in honor of the memory of Professor Rosalind (Hyman) Blauer, founding member of the Brock Department of Economics.

#### **Brock University Alumni Award**

Value: \$500. Eligible candidates will be full-time or part-time students who have completed at least ten credits at Brock University with a minimum B average and who have made a meaningful contribution to the development of extracurricular life within the Brock community. This award is by application or nomination to the Alumni Association. Forms are available from the Alumni Office, Thistle 263.

Donor: Brock University Alumni Association

Established: 1974

#### **The Campus Recreation Jubilee Award**

Value: varies annually. To be divided annually to deserving participants (1 male and 1 female) in the campus recreation program.

Donors: 1989-90 Campus Recreation Staff

#### **CUPE Local 2220 Awards**

Two awards: \$500 to a full-time student; \$300 to be awarded to one part-time student or to be shared equally by up to three part-time students. Recipients must be

members of CUPE or relatives of CUPE members. Applications are available from the Scholarships Officer. Deadline February 1.

#### **Edward J. Freeland Award**

Value: \$5000. To be awarded annually to each of two students of proven financial need who are entering Business Administration or business-related disciplines and whose admission average is 75 percent or higher.

Students must be residents of the greater Fort Erie area and graduates of one of: Fort Erie Secondary School, Lakeshore Catholic School, Niagara Christian College or Ridgeway-Crystal Beach High School. The award will be tenable by the student in each undergraduate year of full-time study, provided satisfactory academic standing is maintained.

Donor: Edward J. Freeland Foundation  
Established: 1991

#### **Halia Jordan Memorial Book Prize**

Value: \$150. To be awarded each April to a deserving international student.

Donors: Friends of the late Mrs. D. L. Jordan  
Established: 1986

#### **Edythe and William Meeker Memorial Book Prize**

To be awarded annually, at the Spring Convocation, to the continuing education student who has graduated that academic year with the highest average.

Donor: Professor J. P. Meeker  
Established: 1971

#### **Silver Badger Alumni Award**

Value: to be determined. This annual award was established in memory of Barrie-Ann Bergsma, a member of Brock's first graduating class, by her family. The award will be made to a student who has maintained high academic standing, while making a significant on-going contribution to the extra-curricular life of the University. This award is by application or nomination to the Senate Committee on Awards. Forms are available from the Office of the Registrar.

Donors: The Family and Friends of Barrie-Ann Bergsma  
Established: 1987

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#### **Bursaries and other financial assistance**

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Bursaries are normally awarded late in the academic year to full-time students who can show proof of great financial need and who have satisfactory academic standing. Bursary application forms are available from the Scholarships Officer in January. Acceptance of a bursary implies that the recipient will complete the current academic year. All students who can show financial need are expected to apply for assistance under the Ontario Student Assistance Program (OSAP).

#### **Atkinson Charitable Foundation**

Value: varies annually. The Atkinson Charitable Foundation has established a bursary program which gives assistance to students of merit and proven financial need. Awards are made only to students who are bona fide residents of the province of Ontario.

Established: 1976

#### **Barkley's of Avonmore Bursary**

Value: \$500. To be awarded as entrance bursaries to deserving students with preference for students from the Third World. Applications for this bursary should be made through the Scholarships Officer. Recipients will be selected by the Senate Bursary Sub-committee.

Donor: Mr. & Mrs. Fred Barkley  
Established: 1980  
Endowed: 1980

#### **The Dr. John H. Belton Bursary**

Value: \$500. To be awarded to a mature woman undergraduate who is a Canadian citizen now completing her interrupted education and who is in need of financial assistance. Further details available on the awarding of the bursary.

Donor: Dr. John H. Belton  
Established: 1986

#### **Morris Berkowitz Memorial Bursary**

Value: to be determined. Established in memory of the late Morris Berkowitz, professor of Sociology. To be awarded by the department of Sociology to a full-time student or students who have a demonstrable need and a major average of

75 percent or better in his or her most recent year of study. Available annually.  
Donors: Friends of the late Professor.  
Established: 1981

#### **J.P. Bickell Foundation Bursary**

Value: \$1750. For distribution to students in great need who are in geology.  
Donor: The J.P. Bickell Foundation, Trustees, National Trust.  
Established: 1969

#### **Birks Family Foundation Bursary**

Value: varies annually. The Birks Family Foundation has established a plan of annual contributions to the student aid fund of recognized Canadian universities for the creation of the Birks Family Foundation Bursaries. The bursaries are awarded by the Foundation on the recommendation of the University scholarship committee and are not restricted to faculty or year and may be renewed. The number and amount of such awards may vary annually, depending upon the funds available for the purpose from the Foundation.

Established: 1968

#### **Canadian Auto Workers Union, Local 199, Bursaries**

Amounts to be determined from time-to-time by the donor.

Donor: United Auto Workers Union, Local 199  
Established: 1966

#### **CUPE Local 1295 Bursary**

Value: \$500 annually. To be awarded to a son or daughter of a member of CUPE who demonstrates financial need. First consideration will be given to children of members of CUPE local 1295. If there are no suitable candidates from this group, next consideration will be given to children of members of a Niagara CUPE local and finally, to children of members of a CUPE local in Ontario. Deadline for applications: February 1.

#### **William J. Edgar Bursary**

Value: \$900. Awarded annually to needy students from the former county of Welland.

Donor: Jenny Bell Edgar Estate  
Established: 1966  
Endowed: 1966



## Scholarships and Awards

### **Jim Gayman Bursary**

Value: \$100. To be awarded to a student living in residence who is in financial need.

Donor: Brock University Alumni Association

Established: 1981

### **Patrick Geddes Award in Urban Studies**

Value: \$500. To each of two students of proven financial need who are accepted to full-time studies in year 2, 3 or 4 as combined majors in Urban Studies and one of: Biological Sciences, Economics, Geography, Geological Sciences, Politics or Sociology. This award is by application only to: Director of the Institute of Urban and Environmental Studies, prior to July 1.

Established: 1972

### **Prof. Ernest E. Goldsmith Bursary Fund**

Value: \$900. To be distributed among worthy students in financial need.

Donor: Brock University Alumni Association

Established: 1974

### **Club Heidelberg Bursary in German**

Value: \$100. To be awarded to a student in second-, third- or fourth-year of German language and literature studies or the German area studies program, on the basis of academic excellence and need.

Donor: St. Catharines Social Club Heidelberg Inc.

Established: 1973

### **Robert C. Hoover Bursary**

Value: to be determined annually. May be awarded to one or more eligible applicants. Eligibility: full-time combined major in Urban and Environmental Studies at the second-, third- or fourth-year levels. For students who can demonstrate a financial need and who show academic promise. To be awarded by Senate on the advice of the Director of the Institute of Urban and Environmental Studies. Interested students should apply through the Institute.

### **Interprovincial Pipe Line Bursary**

Value: \$1000. Awarded annually to students holding Canadian citizenship or permanent resident status who can demonstrate great need.

Donor: The Interprovincial Pipe Line Company

Established: 1970

### **Harry Karowec Memorial Bursary**

Value: to be determined. To be awarded to a student in great need majoring in English literature.

Donor: Mrs. Ellen Cote

Established: 1982

Endowed: 1982

### **T. J. Kearney Bursary**

Value: to be determined. To provide assistance to worthwhile students in financial need with preference to students of proven athletic ability. Students apply through the Department of Athletics and Services.

Established: 1979

### **Evelyn Kita Bursary**

Value: \$300. Awarded to students in great need.

Donor: Mrs. Evelyn Kita

Established: 1972

### **Ted Lancaster Bursary**

Value: \$1500. To be awarded to students in need.

Donor: St. Catharines Rotary Club

Established: 1976

### **Professor Bruce A. Liberty Memorial Bursary**

Value: to be determined. To be distributed by the Department of Geological Sciences to worthy undergraduate or graduate students who have a demonstrable need and a satisfactory record (normally a major average of 70 percent or better).

Donor: Friends of the late Professor

Established: 1982

### **Howard Martin Memorial Bursary**

Value: to be determined.

To be awarded to a student in years two, three or four of the Urban and Environmental Studies program. Candidates must demonstrate an interest in the natural environment, communicate their interest to others and have an acceptable academic average. By application to the Director, Urban and Environmental Studies.

Donor: The Niagara Falls Nature Club

Established: 1991

### **Stan Mikita Bursary**

Value: to be determined. Provides funds to continuing students in financial need who have satisfactory academic performance and who have achieved a high level of accomplishment in extracurricular activities. Students apply through the Department and Athletics and Services.

Donor: Dr. S. Mikita

Established: 1972

### **Niagara Regional Development Council Bursary**

Value: to be determined. To be awarded to a student or students pursuing studies, investigation or research directed to the promotion of the economic growth of areas known as the Regional Municipality of Niagara, the counties of Brant, Haldimand and Wentworth, the City of Hamilton and the City of Brantford.

Donor: Niagara Regional Development Council

Established: 1974

Endowed: 1974

### **Order of Eastern Star Bursary**

Value: \$150. Awarded to the son or daughter of an Eastern Star member of District Seven, which includes Niagara Falls, Fort Erie, Dunnville, Port Colborne, Welland, Thorold, Fonthill and St. Catharines. The recipient must have satisfactory academic standing.

Donor: Lincoln Chapter No. 142 Order of Eastern Star

Established: 1966

### **Margaret Paddon Bursary**

Value: \$300. To be awarded to a student who is (a) a single parent supporting a family; (b) in financial need; and (c) aspiring to the teaching profession. Application may be made through the Financial Aid Office.

Donor: Members of the French department, Lincoln County Board of Education

Established: 1979

### **Royal Canadian Legion Bursary**

Value: \$400. Awarded to a second-year student who is a veteran or the child of a veteran.

Donor: Royal Canadian Legion, H.T. Church (Ontario No. 24 Branch)

Established: 1967

**St. Catharines Jr. Falcons Hockey Club Bursary**

Value: \$200. To provide assistance to worthwhile students in financial need with preference to any student with proven athletic ability.

Established: 1978

**St. Catharines Business and Professional Women's Club Bursary**

Value: \$200. To provide assistance to female student in financial need and who is a permanent resident of St. Catharines.

Donor: St. Catharines Business and Professional Women's Club

Established: 1989

**Larry Sweeney Memorial Bursary**

To be awarded to a student in years two, three or four in the Urban and Environmental Studies program. Candidates must demonstrate financial need and have an acceptable academic average. By application to the Director, Institute of Urban and Environmental Studies.

Donor: Family Savings and Credit Union

Established: 1991

**University Women's Club of St. Catharines Bursary**

Value: to be determined. To provide assistance to female students in financial need.

Donor: Canadian Federation of University Women

Established: 1980

**University Women's Club of St. Catharines Bursary**

Value: To be determined. To provide assistance to a mature female student who is continuing her interrupted education on a part-time basis and is in need of financial assistance.

Donor: Canadian Federation of University Women.

Established: 1987

**Administration of awards**

Awards which are administered by the University will be made by Senate to qualified candidates; Senate may withhold any award if no candidates qualify.

The award of scholarships, bursaries, prizes and medals shall be final when formally announced by the University.

**Awards administered by donors****American Can of Canada Limited**

Competitive scholarships are awarded to children of employees giving full tuition for four years plus a grant-in-aid to the University. Prospective candidates should apply to:

The Administrator  
Scholarship Program

American Can of Canada Limited  
1 International Boulevard  
Rexdale, Ontario, M9W 1A1

**Asbestos Workers Union Local 95**

Awards are made available to the children of both living and deceased members of the Asbestos Workers Union, Local 95 and further information should be obtained from:

The Administrator  
Asbestos Workers Welfare Fund  
c/o Benefit Plan Administrators Ltd.  
Box 52, Toronto-Dominion Centre  
Toronto, Ontario, M5K 1G2

**Association of Universities and Colleges of Canada (AUCC)**

AUCC administers a number of scholarships offered by private donors and by foreign countries to Canadian students. Complete information can be obtained from:

AUCC  
151 Slater Street  
Ottawa, Ontario, K1P 5N2

**Bobby Bauer Memorial Award**

For students of outstanding proficiency in hockey in need of financial assistance. Apply, prior to August 31, to:

Bobby Bauer Memorial Foundation  
60 Victoria Street North  
Kitchener, Ontario, N2H 5B9

**Canadian Armed Forces University Subsidization Plans**

The University participates in the Regular Officer Training Plan (ROTP) of the Canadian Armed Forces, a completely subsidized university plan covering tuition, books, medical service and a living allowance for up to four years of undergraduate study. Successful applicants will be enrolled in the Canadian Armed Forces as officer cadets with promotion to commissioned rank upon graduation.

**Canadian International Paper Company**

Seven scholarships are offered annually to children of employees of the company or its subsidiaries in Canada who have a minimum of one year of service. To be eligible, a student must attain a grade average of 75 percent or higher in the last two years of secondary school in the subjects required for admission to an approved institution. Further information and application forms may be obtained from:

Awards officer  
National Programs Division  
Association of Universities and Colleges of Canada  
151 Slater Street  
Ottawa, Ontario, K1P 5N1

**The Certified General Accountants Association of Ontario Award**

An annual award for excellence to a student graduating from Brock University who has displayed outstanding achievement in accounting. The award is \$1000 composed of a cash award of \$150 plus a credit of \$850 to be drawn on when the candidate wishes, for the purpose of defraying any fees related to courses in the CGA study program.

Donor: The Certified General Accountants Association of Ontario  
Established: 1981

**Chemistry Alumni/Faculty Award**

One or more scholarships shall be awarded each year to upper-year students in a single or combined major in Chemistry. Preference is normally given to second-year students. The value of each award shall not be less than \$100.

**Sir James Dunn Scholarship**

This award, which is renewable, provides for the payment of tuition and registration fees up to but not in excess of \$1,000 depending on the individual concerned. Children of residents of the communities of Sault Ste. Marie, Port Colborne and Wawa, Ontario, are eligi-

## Scholarships and Awards

ble. Qualified candidates should write for further information to:

The Secretary  
Scholarship Committee  
Algoma Steel Corporation Ltd.  
Sault Ste. Marie, Ontario

### **The Hamilton Foundation Bursaries**

Applicants must be graduates of a Hamilton secondary school (public or separate) and be able to demonstrate financial need. The purpose of The Hamilton Foundation Bursaries (payable from its Chaney-Ensign Fund) is to provide assistance for the higher education of students who might otherwise be financially unable to attend an approved college/university in Canada or the United States. Applications will be reviewed by a special bursary committee on the Hamilton Foundation. Enquiries should be addressed to the University's Financial Aid office.

### **Imperial Oil Higher Education Awards**

Imperial Oil Limited annually offers free tuition and other compulsory fees to all children or wards of employees or annuitants who proceed to higher education courses. The courses may be taken at any Canadian university or other approved institution of higher learning. Each award is tenable for a maximum of four years. To be eligible, a student must attain an average mark of 70 percent or higher in the appropriate secondary school examinations of the subjects required for admittance to the approved institution. Further information and application forms may be obtained from:

The Secretary  
Committee on Higher Education  
Imperial Oil Limited  
111 St. Clair Avenue West  
Toronto, Ontario, M5W 1K3

**International Nickel Company of Canada (INCO) Awards** are made, covering the cost of tuition and fees for a maximum of four years, to children of employees. Also, INCO participating scholarships for students in the physical sciences. Further information may be obtained by writing to:

The International Nickel Co. of Canada Limited  
Box 44, Toronto-Dominion Centre  
Toronto, Ontario, M5K 1E3

### **IODE Bursary**

To be given to needy students who may find it extremely difficult to continue their year without additional outside aid.

### **Leonard Foundation**

Assistance is given in varying amounts to children of clergymen, school teachers, graduates of the Royal Military College of Canada, members of the Engineering Institute of Canada. Further information may be obtained by writing to:

Senior Trust Officer  
Canada Permanent Trust Company  
320 Bay Street  
Toronto, Ontario, M5H 2P6

### **Petrofina Canada Higher Education Merit Awards**

These awards are available to encourage the dependent children or wards of employees or annuitants of Petrofina Canada and its subsidiaries to attain a university education. Further information may be obtained from:

The Manager  
Personnel Administration and Industrial Relations  
Petrofina Canada Limited  
1 Place Ville Marie  
Montreal, Quebec

### **St. Catharines Softball Association Bursary**

To be awarded to students of outstanding proficiency in softball. Candidates must also exhibit strong leadership and scholastic ability.

Apply to:  
St. Catharines Softball Bursary  
110 Collier Rd. S.  
Thorold, Ontario L2V 3T4

### **Thompson Products Limited Old Guard Association**

Awards are made available to the children of employees of Thompson Products Limited. Further information may be obtained by writing to:

The Treasurer  
Old Guard Association of Thompson Products Limited  
Box 3004, 230 Louth St.,  
St. Catharines, Ontario  
L2R 7B5

### **Department of Veterans Affairs**

Assistance is available to children of those who have died as a result of military service. This includes service in forces other than those of Canada, if as a result of such service, a pension has been paid on behalf of the child under the Canadian Pension Act. Further information may be obtained through the Veterans Welfare Service of the Department of Veterans Affairs in the applicant's own district.

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### **To prospective donors**

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The University welcomes offers of funds for scholarships, bursaries and prizes from individuals, companies and associations.

Enquiries should be addressed to:

Manager, Development  
Brock University  
St. Catharines, Ontario  
L2S 3A1  
(416) 688-5550 ext. 3590 (After October 1993: (905) 688-5550, ext. 3590.)

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### **Ontario Student Assistance Program**

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*These are the components of the Ontario Student Assistance Program (OSAP):*

#### **Canada Student Loans Plan**

This plan provides need-tested loan assistance up to and including the doctoral level of study. Students who have reached "independent status" can be assessed for loan assistance without reference to their families' income.

#### **Ontario Student Loans Plan**

The main purpose of the provincial loans plan is to make need-tested loan assistance available to students who are not covered by the Canada Student Loans Plan. This will include students taking less than 60 percent of a normal course load and some full-time students whose needs are not fully met by the Canada Student Loans Plan.

Under the new Ontario Student Assistance Program (OSAP), students will receive more loan assistance and the average student debt will increase. Instead of providing grant assistance during the academic year, loan debts in excess of \$5570.00 per year will be forgiven when the student leaves school.

#### **Ontario Special Bursary Plan**

The provincial bursary plan ensures that particularly needy part-time students receive grant assistance. There will continue to be an upper limit on the number of courses that a student can take (three credit courses or their equivalent); students will not be able to receive financial assistance from both this program, the Canada Student Loans and Ontario Students Loans program at the same time.

All students who are attending Brock University may qualify for aid under one or more of these plans provided they satisfy the residency requirements outlined in the OSAP brochure and demonstrate financial need. Students wishing to apply under the Ontario Student Loans Plan or the Canada Student Loans Plan can do so on the same application form. Students intending to apply under the Ontario Special Bursary Plan should contact the Financial Aid office directly to arrange a personal interview.

Application forms and brochures for the 1993-94 program will be available in April, 1993 and may be obtained from:  
Financial Aid Office  
Thistle north, room 260  
Brock University  
St. Catharines, Ontario  
L2S 3A1

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#### **Reporting awards**

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All full-time students receiving OSAP assistance are obliged to notify the Student Awards office, in writing and without delay, about awards, scholarships, bursaries or prizes they may have received.

# Governing Bodies (as of January 1, 1993)

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## Chancellor

Hon. Robert S. Kemp-Welch, QC, BA (McMaster), LL.D. (Brock and McMaster)

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## Board of Trustees

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Ross Hall (Grimsby)

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President and Vice-chancellor

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## Senate

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President and Vice-chancellor

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Associate vice-president, Academic

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Dean of the Faculty of Education

Dean of the Faculty of Humanities

Dean of the Faculty of Mathematics and Science

Dean of the Faculty of Physical Education and Recreation

Dean of the Faculty of Social Sciences

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President, Concordia Lutheran Theological Seminary

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1982 Wayne T. Jolly, *Geological Sciences*

1983 Donald J. Ursino, *Biological Sciences*

1984 Angus A. Somerville, *English Language  
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1985 Martha Husain, *Philosophy*

1986 Norah Carlsen, *Psychology*

1987 Alan G. Arthur, *History*

1988 John G. Benjafield, *Psychology*

1989 Clarke W. Thomson, *Geography*

1990 Eric R. Muller, *Mathematics*

1991 Mary Frances Richardson, *Chemistry*

1992 Joan M. Preston, *Psychology*

### *OCUFA Award Recipients:*

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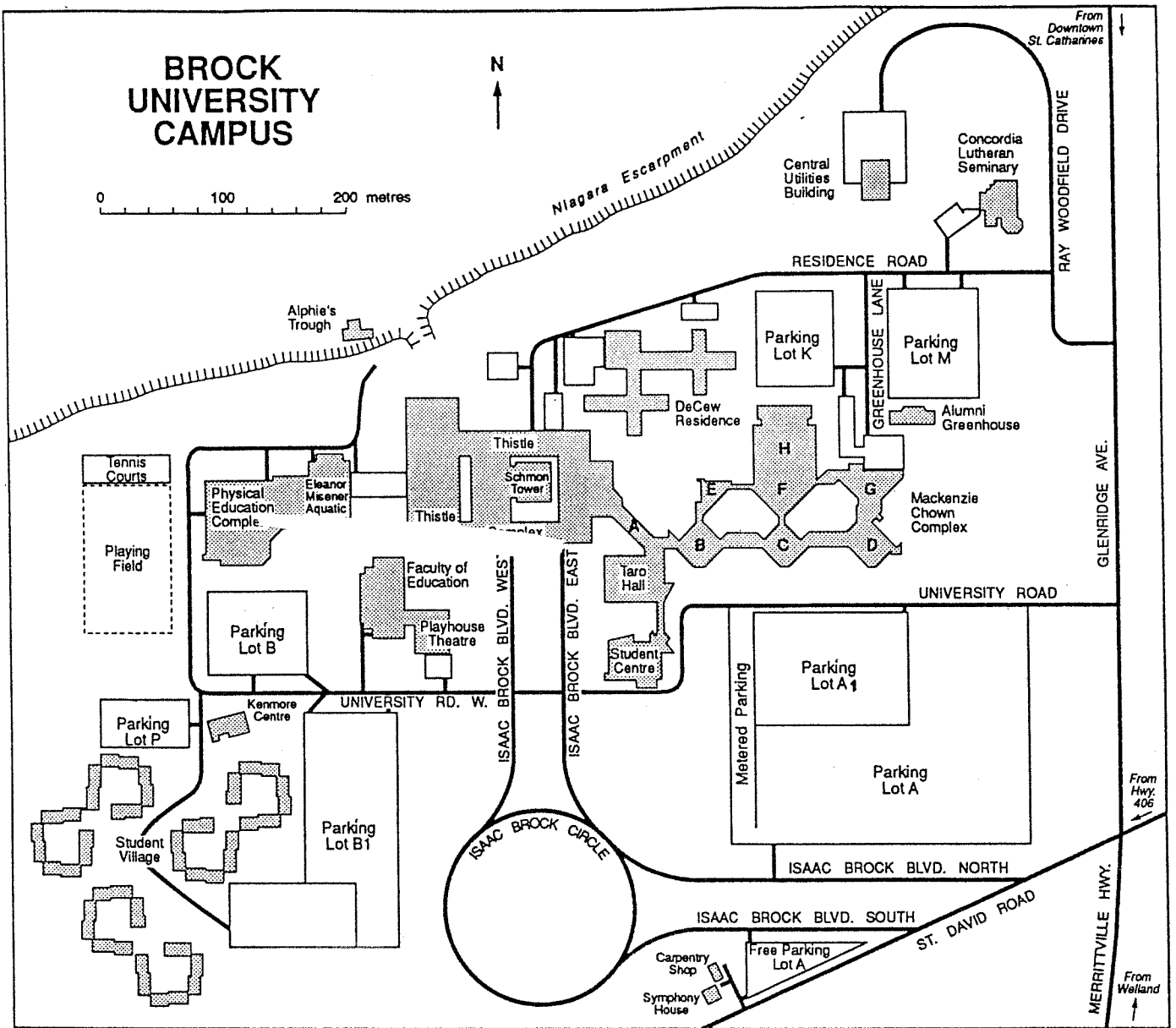
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