

Brock University



Undergraduate Calendar
1988-1989

Diane

The Undergraduate calendar 1988/1989

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 1988-89

An academic timetable giving times and locations for all courses to be offered in any one session (spring evening, summer day 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.

Schedule of dates

Winter Session 1988

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

Friday	March 4	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for all fall/winter full, winter term half and two term half courses.
Sunday to Sunday	March 13 March 20	Spring break, College of Education, Pre-service program.
Friday	April 1	Good Friday. University closed; library open.
Friday	April 8	Last day of classes, winter term.
Saturday through Saturday	April 9 April 23	Final examinations.
Friday	May 6	Last day of classes, Pre-service education program.

Spring Evening Session 1988

Monday and Tuesday	April 25 April 26	Registrants pick up class timetables and I.D. cards in accordance with the schedule published in the Registration Procedures booklet. First day of classes spring evening session.
Wednesday and Thursday	April 27 April 28	Late registration for spring evening session with payment of \$35.00 late registration fee.
Monday	May 2	Last day for spring evening session full, first term half and two term half course changes with permission of the instructor.
Wednesday	May 11	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for all spring evening session first term half courses.

Monday	May 23	Victoria Day. University closed; library open. Spring evening classes will be held.
Friday and Saturday	May 27 May 28	Spring evening mid-term (progress) examinations in courses numbered 1(alpha)00-1(alpha)99. Final examinations for first term half courses
Monday	May 30	First day of classes for spring evening session second term half courses.
Friday	June 3	Spring convocation. Last day for spring evening session second term half course changes with permission of the instructor.
Wednesday	June 15	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for all spring evening session full, second term half, and two term half courses.
Thursday	June 30	Last day of classes in spring evening session.
Thursday and Friday	June 30 July 1	Canada Day holiday. University closed; library open. Spring evening classes and examinations will be held.
Friday and Saturday	July 1 July 2	Spring evening session final examinations.
Summer Day Session 1988		
Monday	July 4	Registration and first day of classes, summer day session.
Tuesday through Thursday	July 5 July 7	Late registration for summer day session with payment of \$35.00 late registration fee.
Monday	July 11	Last day for summer day session full, first term half and two term half course changes with permission of the instructor.
Wednesday	July 13	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for summer day session first term half courses.
Friday	July 15	Last day for receipt of applications to graduate at fall convocation 1988.
Friday and Saturday	July 22 July 23	Summer day mid-term (progress) examinations in courses numbered 1(alpha)00-1(alpha)99. Final examinations for first term half courses.

Schedule of Dates 1988

Monday	July 25	First day of classes for summer day session second term half courses.
Friday	July 29	Last day for summer day session second term half course changes with permission of the instructor. Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for summer day session full and two term half courses.
Monday	August 1	Civic holiday. University closed; library open. Summer day classes will be held.
Wednesday	August 3	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for summer day session second term half courses.
Monday	August 8	Last day for receipt of applications for admission to full or part time studies in fall/winter session in order to ensure processing prior to the normal registration period.
Friday	August 12	Last day of classes in summer day session.
Friday and Saturday	August 12 and 13	Summer day session final examinations.

Fall/Winter Session 1988

Monday	September 5	Labor Day. University closed; library closed. English language test for visa students at 2:00 p.m.
Tuesday and Wednesday	September 6 and 7	Registrants pick up class timetables and I.D. cards in accordance with the schedule published in Registration Procedures booklet for fall/winter full and part time studies. Literacy assessment test for all incoming Year 1 students; specific times to be announced.
Tuesday to Friday	September 6 and 9	Orientation week for Pre-service education.
Thursday	September 8	First day of fall classes, day and evening sections, undergraduate studies.
Monday	September 12	First day of fall term classes, Pre-service education program.

Schedule of Dates 1988 aand 1989

Thursday through Friday	September 8 September 23	Late registration on payment of \$35.00 late registration fee for fall term half courses and for fall/winter session full courses.
Thursday through Friday	September 8 January 13, 1989	Late registration on payment of \$35.00 late registration fee for winter term half courses.
Monday	September 26	Last day for fall/winter session full, first term half and two term half course changes. Last day for consideration of entrance and in-course scholarships
Monday	October 10	Thanksgiving Day. University closed; library closed.
Friday	October 28	Fall convocation.
Friday	November 18	Last day for withdrawal without the assignment of a grade and last day for change from credit to audit status for fall term half courses.
Wednesday	December 7	Last day of classes, fall term.
Thursday through Thursday	December 8 December 22	Mid-year (progress) examinations in courses numbered 1(alpha)00-1(alpha)99. Final examinations for fall term half courses.
Thursday	December 15	Last day of classes, fall term, Pre-service program.
Friday through Monday	December 23 January 2, 1989	Christmas recess.
1989		
Tuesday	January 3.	First day of winter classes, day and evening sections, undergraduate and Pre-service education studies.
Tuesday through Monday	January 3 January 16	Late registration in winter term half courses with payment of \$35.00 late registration fee.
Monday	January 16	Last day for winter term half course changes with permission of the instructor.
Tuesday	January 31	Last day for receipt of applications for OSAP (Ontario Student Assistance Program) for fall/winter session.
Monday	February 13	Last day for receipt of applications to graduate at spring convocation, 1989.

Schedule of Dates 1989

Sunday through Sunday	February 19 February 26	Winter reading week. No classes will be held in undergraduate programs.
Friday	March 3	Last day for withdrawal without the assignment of a grade and last day to change from credit to audit status for all fall/winter full, winter term half and two term half courses.
Sunday through Sunday	March 12 March 19	Spring break, College of Education Pre-service program.
Friday	March 24	Good Friday. University closed; library open.
Friday	April 7	Last day of classes, winter term.
Saturday through Saturday	April 8 April 22	Final examinations.
Monday and Tuesday	April 24 April 25	Registration and first day of classes, spring evening session.
Friday	May 5	Last day of classes, Pre-service education program.
Friday	June 2	Spring convocation.

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.

General Information

For almost 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, most importantly, 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 228).

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 either a seminar, laboratory or tutorial setting in addition to the more formal lectures.

Location

Brock University is located on the Merritville 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 on page 253.

The Office of the Registrar is in Room 301 of the Schmon Tower and is open from 8:30 a.m. to 7:00 p.m. Monday to Thursday during fall/winter and spring evening sessions (September through June) and from 8:30 a.m. to 4:30 p.m. at other times.

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 courses during a fall/winter session, or directly to Brock for fewer than 3.5 courses. 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 16.

Certain rules apply to all students and to all programs. These are shown in the section called Academic Programs and Regulation, page 25. See the Glossary on page 22 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 35.

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 (see page 144).

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 20 and 228 respectively.

Team spirit

Extracurricular 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.

Campus tours

Campus tours are available weekdays throughout the academic year at 10 a.m., or at other times by arrangement. During the summer months, tours are available at 10:00 a.m. and 2 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 Department of External Relations Brock University, St. Catharines, Ontario L2S 3A1 (416) 688-5550, ext. 3245

Life at Brock

Student organizations

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 of the University.

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

Through student fees, BUSU sponsors and supports such programs as orientation week; the General Brock store; *Press*, the student newspaper; Radio Brock; the book exchange; collage films; and more than 40 special interest clubs. Students also have access to the ombudsperson, who is elected each spring to a one year term. The ombudsperson may represent students' interests within and outside the University, as well as act as the students' 'watchdog' over BUSAC. Although not a lawyer, the ombudsperson has access to expert legal advice, should it be necessary.

In cooperation with the University, BUSU manages the on-campus pub.

Students also participate in University policy-making by electing four representatives to sit on Senate, and three to sit on the Board of Trustees.

The BUSU office is located in room 828 in the main Thistle corridor (Thistle west); telephone 688-5550, ext. 3568.

Alumni Association

With your graduation comes a new relationship with the University. You will have joined the more than 15,000 members of Brock's Alumni Association. Full membership privileges (including special membership prices at the physical education complex and reduced-rate borrowing privileges from the library) are available to anyone who holds a degree or certificate from the University.

The goal of the Alumni Association is to maintain and promote unity among graduates and a sense of loyalty to the University. 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 Ottawa and Malaysia. Programs such as exam-time Survival Kits and the Grad Event help put alumni in touch with the current student body--their future members. The Association also provides support for its sister group, the Brock Student Ambassadors.

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 extracurricular 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.

For information about the Alumni Association or any of its programs, contact the Alumni Office, (416) 688-5550, ext. 3251.

Facilities and services

University Library

The University library is housed on six floors of the Schmon tower, the focal point of the campus. Its collections, numbering over 700,000 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 750 readers. The library is open, including evenings and weekends, for 91 hours each week; opening hours are extended during exam periods and the information desk is manned on Sundays during busy periods.

The library maintains a number of separate collections. The reserve collection contains heavy-demand books and articles which are required course reading and is located at the circulation desk. 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 listening room, equipped with record players and tape decks, contains over 6,000 recordings of music, plays, documentaries and lectures. All music books and scores are shelved in the listening room.

Access to the collections is available through an online computer catalogue with computer terminals on each floor of the library. This catalogue provides 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 precise location of each item in the library is shown as well as return due dates for items which are out on loan.

The library's online circulation system provides a speedy control process and

an efficient recall procedure for books requested by individual borrowers. In order to borrow materials from the library, students must register with the library and must present a valid University ID card. Each registered borrower is fully responsible for any materials signed out in his name. Materials other than books and items from the reserve collection do not normally circulate outside the library.

Items not available in the library collections may be requested from other libraries through the Interlibrary Loan Service. Brock students may also borrow in person, through a reciprocal agreement, from the libraries at Guelph, Waterloo, Western, Wilfrid Laurier and York Universities.

Experienced librarians are available to assist in the use of the collections and the online catalogue at a central information desk. They also provide a computer search service, a quick and efficient method of searching indexes and abstracts in over 300 databases. A charge is made for this service depending on the database used and the amount of time required for the search. Free access to selected databases on compact disks is available at microcomputer workstations. Individual and group orientation tours are available; bibliographic instruction and subject-related seminars can be arranged at scheduled times on request.

A private study room and specialized equipment (including a Visualtek reading machine, Brailers, a talking calculator, tape machines, magnifying glasses and a wheelchair) are available for the use of the disabled. Further information is available from the reference department.

Coin-operated photocopy machines are located throughout the library. Equipment is also available for reading microforms and for making paper copies from them.

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

The University map library, administered by the university library, is located in Room C306 in the department of Geography. It contains over 50,000 map sheets, including a complete set of federal topographic maps of Canada, over 500 atlases and 14,800 aerial photographs, including coverage of the Niagara Region dating back 60 years. The map library has a terminal for accessing the online catalogue into which the atlas and map holdings are being entered.

The map library resources and facilities are available to the general public for reference purposes.

Instructional resource centre

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

Computing services

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 a Burroughs B7900 which is accessed via terminals located in various laboratories throughout the University.

The computing facilities are available to faculty, staff and students. Students requiring the use of the B7900 for their courses are supplied with a usercode by their instructor.

The system supports all the major programming languages such as PASCAL, ALGOL, FORTRAN IV (and FORTRAN 77), BASIC, COBOL (and COBOL 74), APL and SIMULA together with a number of application

Facilities and Services

packages which include SPSS, SPSS*, SCSS, HTSP, IMSL, BMDP, CLUSTAN, TEMPO, and MULTIVAR.

Division of mathematics and sciences

The division's VAX-11/780 computer is housed in section F of the Mackenzie Chown complex. This computer is used primarily by computer science students.

Currently the division's VAX supports PASCAL, FORTRAN, COBOL, Macro, Ada, Modula-2, Bliss and Simscript programming languages, as well as the Oracle relational database.

Division of social sciences

The division administers several micro-computer laboratories.

Athletics and recreation

Our programs and facilities are designed to involve as many members of the University community as possible--as participants and as fans.

Physical education centre

Recreational, instructional, intramural, and intercollegiate activities revolve around the physical education centre. Facilities include two gymnasias, combatives room, fencing/dancing studio, weight and training rooms, five squash courts, one handball court and a 50 metre eight lane swimming pool. Classrooms and offices are also included.

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

Campus recreation

Open to all students, staff and faculty who hold memberships in the physical education centre, our physical activity programs encompass the following areas:

Recreation: For those who prefer not to participate in structured programs, squash and racquetball courts may be booked in advance; other facilities are available as posted. There are badminton, gymnastics, ski, cycling, cross-country ski, competitive ski, tai chi, karate, kung fu, and outer's clubs. New clubs will be organized according to demand.

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.

Instruction: If you want to be introduced to a new activity, or want to improve existing skills, join one of the instructional programs. Lessons are offered in cross-country skiing, jazz dance, ballet, social dance, fitness, racquet ball, squash and weight training. Instruction is also offered through the recreational clubs program.

Intercollegiate programs

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

Bookstore

Thistle south, room 219

The Brock bookstore is the primary source of required and recommended reading materials. It also stocks stationery, magazines and a wide range of other reading material.
Bookstore hours: fall/winter session:

Monday - Thursday 9 a.m. to 7 p.m.
July and August: Monday - Friday 10 a.m. to 4:30 p.m.

Services for Disabled students

Brock recognizes the rights of hearing-impaired, mobility-impaired, visually-impaired and learning-disabled students to pursue a post secondary education and is endeavouring to provide for their physical and learning needs.

Ramps and elevators provide access to most facilities in the University. A power-operated elevating wheelchair in the science labs allows mobility-impaired students to be within reach of the various pieces of equipment. Electric mobility devices can be stored and recharged.

A reference librarian has been assigned to work with disabled students in the library, whether it is to locate particular material or to obtain brailled or talking books.

Students with disabilities should contact L.A. Towe, Associate Registrar, so that appropriate arrangements for assistance can be discussed. This might include a general campus orientation, parking facilities, classroom procedures, writing of examinations, individual study carrels or other matters of concern to the student and his family.

It would also be advisable to register with Health Services, Thistle east, room 261, so that they can be prepared to offer any necessary care.

Many people on campus are willing to give assistance as required, but all disabled students need to inform us of their specific needs

For further information:
L.A. Towe,
Associate Registrar,
Office of the Registrar,
(416) 688-5550, ext. 3444

Student Services

Ronald McGraw
Dean of Student Services
Schmon tower, room 300

The University provides a number of services for students, including academic and psychological counselling, health services, housing, career planning and job placement, and financial assistance.

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

Counselling centre

David Jordan, director
Schmon tower, room 411

The counselling centre provides a variety of psychological and educational services designed to help students take full advantage of their university experiences. Direct services for students focus on personal development, learning skills and career planning. The staff is also available to consult with any member of the Brock community on issues of common concern.

1. Learning skills programs

Learning skills programs such as study skills, effective reading, essay writing, seminar skills, math re-entry, anxiety management and statistics survival are offered throughout the year. These are publicized at registration and in *Press*.

2. Career services

Career assistants (CAs) are available on a regularly scheduled basis to guide students through a career planning process, and to assist them in using

career resources. CAs are students who are trained and supervised by counselling staff.

3. Individual counselling

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

4. Resource room

The centre's resource room contains tapes, books and pamphlets dealing with, among other topics, making decisions, career planning, women's issues, personal growth and study skills. Many of these materials provide systematic, self-directed programs for developing personal resources and achieving goals.

Confidentiality

Use of counselling services is entirely voluntary. All contacts are confidential, and information is not released without the individual's expressed consent. If students would like a definite time set aside for them, they should call or drop in to make an appointment.

Joan McCurdy-Myers,
programs coordinator

Cathie Closs,
career services co-ordinator

Leslie Myers,
counsellor

Sandy Coggins,
counsellor

Elinor O'Neill
counsellor

Jackie Calabretta,
writing programs co-ordinator

Campus Ministries

DeCew residence, rooms 201 and 202

Brock Campus Ministries is people-oriented, designed to provide opportunities for growth and spiritual development as an integral part of the University experience through such activities as worship, spiritual direction pastoral counselling, workshops, seminars, study groups and public lectures.

Anyone wanting to be a part of the community, to share concerns and experiences, or to speak in confidence about any matter (religious or otherwise) is welcome at Campus Ministries.

Rev. George Tattric (Protestant Ecumenical Chaplain), room 201.
Father Frank Wagner, c.s.c. (R. C. Ecumenical Chaplain), room 202.

(416) 688-5550, ext. 3373.

Student awards

Ann Stavina, Student awards officer
Thisle south, room 260

Full and part time students in need of financial aid should visit the student awards office for information about the assistance programs sponsored by the federal and provincial governments. All necessary forms are available from the office.

The University awards a number of scholarships and bursaries to students. Scholarships are awarded on the basis of academic achievement, and no application is required. Bursaries, however, are granted on the basis of academic performance and financial need, and application forms may be obtained from the office.

For more information, see the separate section, *Scholarships, awards and*

Student Services

financial assistance.

Health services

Thistle east, room 261

A physician is in attendance each morning for three hours to provide medical services, referrals, and consultations when required, and will see students by appointment. The nurse is in attendance 8 am to 4 pm, Monday through Friday. This service operates from September to May.

All students must have Ontario health insurance (OHIP) coverage. Information about OHIP will be available at registration.

Foreign student adviser

John Kaethler
DeCew residence, room 215

Foreign students may find it helpful to discuss academic or personal problems with the foreign student adviser. He can offer assistance regarding 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

Brock University, in conjunction with the St. Catharines University Women's Club, and the Foreign student adviser, offers a host family program for foreign students. This is not an accommodation service, but an opportunity for students to meet with Canadian families.

Residence

James R. Fleming, director of residence
DeCew residence, room 206

Residence

The University provides on-campus and off-campus accommodation for approximately 700 students. Students wishing to live in residence should write directly to the director of residence for information about the types of residence, meal plans and fees. 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.

Off-campus accommodations

The housing office, located in DeCew residence, posts lists of off-campus rooms, apartments and houses available for rent. Contact the Housing office on how to access the listings by telephone.

PLACEMENT OFFICE (Canada employment centre On-campus)

John Jackson, employment counsellor
Ruth Tatarnic, employment officer

Schmon tower, room 411

Job hunting can be a frustrating experience. The placement office is here throughout the year to help part-time and full-time students and graduates to obtain permanent, part-time and summer employment.

for Permanent Employment

The on-campus recruiting program assists students in their graduating year to apply for permanent, career-related jobs. A number of employers from various industries and various locations throughout Ontario visit Brock annually to interview the graduating

class. October to April only.

The job boards (4th floor, Schmon Tower) advertise career-related jobs throughout the year. Registered graduates are informed about appropriate jobs by phone or mail.

Federal and provincial government recruiting program information is available.

The resource library provides information for students and graduates who want to research companies and government departments in preparation for their job search. Other employment related information that is available covers topics such as: economic trends, salary surveys, job search and resume writing tips, starting your own business, etc.

for Part-Time Employment

The job boards contain a wide variety of long and short term jobs throughout the city of St. Catharines as well as in neighbouring communities. Some of the jobs are located on campus. Many jobs state "no experience necessary".

for Summer Employment

On campus job interviews for summer positions are available to undergraduate students.

Job descriptions and application forms for summer jobs and government programs in the local community and in your home town are available.

Registration forms for Canada Employment Centres for students are available.

Other Services

Free workshops are offered to all students and graduates throughout the school year. Topics include: resume and cover letter writing, ACCIS application form completion, job interview skills and job search skills.

Registration and job referral service to full time employment. Graduates only.

Individualized resume and cover letter critiques.

Individualized assistance regarding any employment related concerns.

Day care centre

Jane Cripps, supervisor
College of Education, room 9

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 College of Education, is a co-operative corporation. The staff is qualified and experienced, assisted by volunteer parents and students.

Call (416) 688-5550, ext. 3515.

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.

Application deadline

Application for admission should be made as early as possible. Application forms and necessary documentation for full time and part time enrolment must be received by the Office of the Registrar no later than Monday, August 8, 1988 to ensure consideration for normal September registration. Students applying after this date, who are subsequently admitted, may be required to register late and pay the late registration fee.

How to apply

Ontario students currently in Grades 12 or 13

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 Grade 13 matriculants, mature applicants, transfer, out-of-province and foreign students. The application form and appropriate fee should be forwarded to the Ontario Universities' Application Centre, Box 1328, Guelph, Ontario, N1H 7P4.

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 18).

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

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

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.

Admission to undergraduate degree studies

Ontario grade 13

Ontario secondary school students must present the Secondary School Honours Graduation Diploma (SSHGD) or the Ontario Secondary School Diploma (OSSD). An overall average of 60 per cent on six grade 13 or Ontario Academic Course credits 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.

Academic standing accepted as equivalent to Ontario grade 13

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 18).

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 U.S.A. must have completed a minimum of 30 semester credits (45 quarter credits) in academic subjects with a minimum average of B at an accredited post-secondary 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 18.)

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 60 per cent as a minimum with a higher average being required where enrolments are limited. Applicants must also be eligible to re-register 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 fulfillment 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 University 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 29 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 per cent) or equivalent.

Applicants must have a cumulative average of B (75 per cent) 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 cumulative average of B (75 per cent) 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 cumulative average of A (80 per cent) 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.

RIA, CGA, CA

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

Bible colleges

Applicants who have completed a degree program at a bible college accredited by the American Association of Bible Colleges will be considered for admission and may receive transfer of up to five credits.

Admission of mature students

Applicants 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 on a mature student basis.

Mature applicants interested in either full time or part time studies are encouraged to apply. Before being permitted to enrol in full time studies, mature applicants should complete two full course equivalents with at least a C average.

In support of their full time application, students must submit official copies of all pertinent academic documentation and a letter outlining:

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

An interview may also be required. Please note that our mature student regulations are 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.

Admissions

Admission to part time studies for Grade 13 students

Students enrolled in Grade 13 may be admitted as special students and permitted to register in one course subject to the following provisions:

- i) they must be registered in a sufficient number of grade 13 courses to qualify for the Ontario Secondary School Honours Graduation Diploma.
- ii) candidates must be recommended by their school and approved by the Brock department concerned.
- iii) they must register in a degree credit course and pay the course fee.

University credit for a course successfully completed will be granted only when the students have been admitted to degree studies.

Re-admission of students who were required to withdraw

Application for re-admission is to take the form of a letter addressed to the Associate Registrar, Admissions.

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 full courses, or the equivalent, 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, or one who is currently registered in a grade 13 program who has met the provisions outlined above for admission to part time studies for grade 13 students. Such students will be permitted to register in the equivalent of one full course per academic session and must obtain a minimum of 65 per cent or better on the equivalent of two full courses to be considered for further studies.

Admission to other programs

College of Education

For information on admission requirements and procedures for the various programs of the College of Education, see page 100.

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.

Proof of proficiency in English

All student visa 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 an English language test. The test results determine the number of courses a student may take.

Foreign student immigration requirements

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 acceptance from Brock University must be presented at that time.

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.

Policy statement

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.

Specific requirements and recommendations for various programs (see also "Ontario Grade 13" - page 16)

Program	Required Gr 13 or OAC Subjects	Strongly Recommended Gr 13 or OAC Subjects	Comments
Administrative Studies (BAdmin)	English	mathematics	Co-op accounting requires 80% average on 6 credits for consideration.
Arts (BA)	English		
Biological Sciences (BSc)	biology, chemistry and either mathematics or physics	English	
Business Economics (BBE)	English	mathematics	
Child Studies (Concurrent BA/BEEd)	English		average of 75% on 6 credits for consideration
Chemistry (BSc)	chemistry, physics, and two mathematics	a third mathematics and English	
Computer Science (BSc)	one mathematics (minimum of 65% required)	English	average of 70% on 6 credits for consideration
Environmental Science (BSc)		biology, chemistry, mathematics and English	
Geological Sciences (BSc)	any two of biology, physics, geology or chemistry	mathematics and English	
Mathematics (BSc)	two mathematics	a third mathematics and English	
Physics (BSc)	chemistry, physics, and two mathematics	a third mathematics and English	
Physical Education (BPhEd)	English		
Physical Geography (BSc)	one science	physical geography, mathematics and English	
Recreation and Leisure Studies (BRLS)	English		

Fees

(Subject to change)

The tuition fees quoted apply to Spring and Summer sessions only. The course fee for September 1988 may be subject to change pending the outcome of a referendum being held by the Brock University Students' Administrative Council (BUSAC).

If the referendum succeeds, an additional \$10 per course will be assessed on behalf of BUSAC. The course fee in September could rise to \$304 and \$990.

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

Fee per course 1988/89	
*undergraduate and College of Education--regular	\$294.00
*undergraduate--visa	\$980.00
Challenge for credit per course	\$150.00
Registration Cancellation Fee per course	\$30.00
Students who completely withdraw from the University between September 8 and September 26 must pay this cancellation fee.	
Late registration fee (chargeable to any student who registers after the official registration day)	\$35.00
Replacement of lost service card	\$5.00
Transcript of record (\$1 for each additional copy on the same order)	\$2.00
Duplicate tax certificate --per copy (replacement only)	\$5.00
Returned cheques**	\$15.00
Off-campus examination fee	\$35.00
Convocation	
Regalia deposit	\$10.00
Replacement of diploma	\$25.00
Another university transcript assessment	\$15.00
Letter of permission application fee	\$25.00

A \$15 fee will be levied for the verification of registration or other status.

*Students who are not Canadian citizens, landed immigrants, foreign 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 will be charged the \$15 returned cheque fee as well as the late registration fee of \$35.

The charge for auditing a course is 50 per cent 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 courses in the winter session will be required to pay a non-refundable health fee of \$20. Students increasing their load to three and one half or more courses will be assessed the health fee. Foreign students paying the foreign (visa) student fee will pay a \$20 non-refundable health fee.

Included in the tuition fee is \$5 per course (amount subject to change) which is collected on behalf of the Brock University Students' Administrative Council (BUSAC) by the Board of Trustees, and a \$7 per course athletic, intramural and recreational program and facilities fee. This portion of the fee is non-refundable.

Payment of fees

All fees are due and payable on the day of registration at which time students must have sufficient funds to pay at least the first instalment of tuition and residence fees. Students taking three or more full courses (six or more half courses) may pay in two instalments. The first instalment is due at registration, the second is due by January 4 without further notice from the University. Instalment payments are subject to carrying charges. See the following section for details.

Carrying charges

Carrying charges for instalment payment of students' accounts (including tuition fees, residence fees, meal plan, incidental fees and any other outstanding fees and charges) will be assessed (charged) as follows: mid November and at the first of each month, beginning in February. See the following schedule for specific dates.

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

Last date for payment without \$100 carrying charges owing	Rate for each Date or part charges assessed	
Nov. 14, 1988	\$3	Nov. 15, 1988
Feb. 6, 1989	2	Feb. 7, 1989
Mar. 6, 1989	2	Mar. 7, 1989
Apr. 3, 1989	1	Apr. 4, 1989
May 1, 1989	1	May 2, 1989
June 5, 1989	1	June 6, 1989
June 29, 1989	1	June 30, 1989
Aug. 8, 1989	1	Aug. 9, 1989
Aug. 31, 1989	1	Sept. 1, 1989

First instalment (regular) SEPTEMBER 1988

5 full courses	\$1,100
4 1/2 courses	\$975
4 full courses	\$875
3-1/2 courses	\$775
3 full courses	\$675

First instalment (visa students) SEPTEMBER, 1988

5 full courses	\$3500
4-1/2 courses	\$3150
4 full courses	\$2800
3-1/2 courses	\$2450
3 courses	\$2100

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 Student Awards 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 \$15 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 1987/88 the residence rates for room and board averaged about \$3300 depending on the type of accommodation and meal plan. An increase is expected for 1988/89.

Withdrawal charges

From September 8 through September 26 no charges are levied for dropping, adding or withdrawing from courses unless the course load is reduced to zero. Students who completely withdraw from the University by September 26 will be subject to a **REGISTRATION CANCELLATION FEE** of \$30 per full course. After September 26, a withdrawal charge will be levied based on the table below.

Tuition fees at withdrawal

Withdrawal notification in writing must be received by the Office of the Registrar by the dates noted below for the 1988/89 fall/winter session. Tuition fees charged per course to the withdrawal dates are listed below.

Date	Full course	1/2 course full year	1/2 course fall term	1/2 course winter term
Sep. 26	0%	0%	0%	0%
Oct 03	30%	30%	40%	0%
Oct. 11	35%	35%	60%	0%
Oct. 17	45%	45%	70%	0%
Oct. 24	50%	50%	80%	0%
Nov. 14	60%	60%	100%	0%
Nov. 28	70%	70%	100%	0%
Jan. 16	80%	80%	100%	40%
Jan. 23	100%	100%	100%	60%
Jan. 30	100%	100%	100%	70%
Feb. 06	100%	100%	100%	80%
Feb. 07	100%	100%	100%	100%

No refunds will be made on full courses or full year half courses after January 16, on first term half courses after October 24, or on second term half courses after February 6.

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 1012, telephone (416)-688-5550, ext. 3286, ext. 3761 or ext. 3289.

Withdrawal charges are calculated from the first day of classes, examples below:

i.e. if you withdraw between -

September 27 & October 3	charged 30%
October 4 & October 11	charged 35%
October 12 & October 17	charged 45%
October 18 & October 24	charged 50%
October 25 & November 14	charged 60%
November 15 & November 28	charged 70%
November 29 & January 16	charged 80%

Glossary of terms

Academic year

The academic year runs from the commencement of the spring evening session until the end of the fall/winter session.

Anti-requisite

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 number of attempts are imposed. See page 29.

Auditor

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

Context elective

A course chosen from the lists of courses in the humanities, sciences and social sciences which satisfy the context requirements. See page 27.

Co-requisite

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

Course

A course is a unit of study in a specific academic discipline (identified by a unique course identifier) which extends over the full session. Half courses are those normally taken entirely in one term of a fall/winter session or its equivalent in the spring evening or summer day. Any two half courses are the equivalent of one full course. Each full course or equivalent is one credit towards a degree.

Course numbering

See page 24.

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 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 value

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 24.

Cross-listed courses

Courses which are listed under two or more departments and which may be taken for credit in one of the departments only.

Department

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

Division

A grouping of departments headed by a dean within the faculty of arts and science, the College of Education, the Schools of Administrative Studies or Physical Education and Recreation.

Elective

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

Full time student

One who is registered in three and one half or more courses.

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 30.

Humanities language requirement

All students with a humanities major must have a credit in a second language within year 1 or year 2. Acceptable courses are listed along with other departmental requirements in individual

humanities sections of the calendar.

Letter of permission

A formal document which allows a Brock student to take one or more courses at another university for credit towards a Brock University degree. See page 31.

Major

A specific concentration of credits in a particular subject or subjects within a degree program as required by the major department(s).

Minor

Those credits taken toward a degree which are not specified as major courses.

Part time student

One who is registered in fewer than three and one half courses.

Pass degree

A 15 credit pass degree is awarded upon the successful completion of an approved program with a minimum overall cumulative grade average (including transfer credits) of 60 per cent. A pass degree *With distinction* is awarded when the overall cumulative average, including transfer average, is 75 per cent or better. This is noted on a student's transcript.

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 completing a registration form and making payment of fees.

Session

The fall/winter session extends from September to April; spring evening session consists of 10 weeks from the end of April to the beginning of July, and summer day session is six weeks

from the beginning of July to the middle of August. See page 4 - 8 for the actual dates.

Term

A term is a particular four month (13 week) period of classes: fall term, September to December; winter term, January to April; spring/summer term, May to August.

Transcript

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

Course numbering system

Brock adopted a new course numbering system in 1987/88 and it is used for all courses listed in the calendar. However, old numbers are used, where appropriate, for prerequisites and exclusions.

In converting to the new system, many of the former course numbers were changed simply by the insertion of an appropriate letter between the first and second digits, e.g.

ENGL 191 -- ENGL 1F91
 MATH 198hc -- MATH 1P98

Some departments used this opportunity to renumber and restructure their course offerings, e.g.

CHST 300 -- CHST 3F96
 LATI 291hc -- LATI 3P10

Sample course designation

Course Identifier

<u>Subject</u>	<u>Number</u>	
BIOL	2F03	
		departmental code
		credit value
		D -- 1.5 credit (Pre-Service Education only)
		F -- 1.0 credit
		M -- 1.0 credit, variable (multiple) topic
		N -- 0.0 credit
		P -- 0.5 credit
		V -- 0.5 credit, variable topic
		Y -- 0.25 credit (Pre-Service Education only)
		year of course
	1	1--year 1
	2	2--year 2
	3	3--year 3
	4	4--year 4
	5	5--graduate studies
	7	7--affiliated colleges
	8	8--pre-service education
	9	9--in-service education

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 full course in Theatre--may count as a second or third year course.
 CLAS 2P10 -year 2 half course in Classics
 POLI 3V70-3V79 -year 3 half 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 full 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 quarter course.
 EDUC 9F42 -in-service education full course.
 POLI 5V30-5V39 -graduate studies half course, variable topic.

It should be noted that not all courses are offered each year. The Class Timetable publication should be consulted for offerings in each session.

Academic programs and regulations

Divisional structure

The academic units at Brock University are grouped into three divisions, two schools, and one college. These are:

Division 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
Fine Arts (includes Drama, Film, Music, Theatre, Visual Arts)
French, Italian and Spanish
Germanic and Slavic Studies (German, Russian)
History
Liberal Studies
Philosophy

Note: see page 26 for second language requirement for students in the humanities.

Division of Social Sciences

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

Division of Mathematics and Science

Biochemistry
Biological Sciences
Chemistry
Computer Science and Information Processing
Geological Sciences
Mathematics
Physics
Pre-Professional Studies for the Health Sciences

School of Administrative Studies

Accounting and Finance
Management and Marketing
Business Economics

School of Physical Education and Recreation

Physical Education
Recreation and Leisure Studies

College of Education

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

Degree requirements

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 15 or 20 course degree with a minimum of five Brock credits or a Brock five-course 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 15 credit pass degree is awarded on the successful completion of an approved program with an overall cumulative grade average of 60 per

cent. A 20 credit honors degree is awarded on the successful completion of an approved program with first or second class honors standing. See page 30 for honors standing terminology.

Note: Only 20 credit honors degrees are available in administrative studies and liberal studies; business economics, and teaching English as a second language, Italian and Russian offer pass degrees only.

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. 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.

Among the first five credits, students must have completed:

- 1.) courses from at least four departments;
- 2.) courses selected from departments within at least two of the divisions of humanities, social sciences and sciences; and
- 3.) at least two of the required three context credits (see page 27).

Among the first ten credits, students must have completed all three of the required context credits (see page 27).

A maximum of five credits toward a pass BA or BSc, and seven credits toward an honors BA or BSc degree, may be taken from any combination of administrative studies, teaching English as a second language, or designated education, physical education, or 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

Academic Programs and Regulations

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.

A single major pass degree program generally requires seven credits in one department. Ten credits are normally required for a single major honors 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 ten credits (five from each discipline) is required for a combined major pass degree and a minimum of fourteen credits (seven from each) is required for a combined major honors 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 chairpersons 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 an acceptable equivalent) or computer science is required of students who choose a concentration of courses in the natural or social sciences; a credit in a second language is required of students who choose a concentration of courses in the humanities (see page 144).

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

designate.

Integrated studies programs are specifically constructed programs at the pass or honors 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 pre-determined 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 'C' 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 per cent 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 (as well, for some programs, specified courses from other departments which are required as part of a single or combined major program) 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 successfully completed.

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

Second language requirement for students in the humanities

Students enrolling in a humanities single major, combined major with one or more majors in the humanities, or where the major concentration of a

general or integrated studies program is in the humanities are required to complete a language requirement as outlined below.

Single or Combined Majors in:

Canadian and European community studies
FREN 1F90 or GERM 1F90

Canadian studies
FREN 1F90

Classics
One 1F90-level course chosen from FREN, GERM, GREE, ITAL, LATI

Dramatic literature
FREN 1F80 or 1F90

English
One 1F90-level or two 1F00-level courses in an ancient or modern language; or in special cases, ENGL 3F92.

Film
FREN 1F80 or 1F90

Fine arts
One 1F90-level or two 1F00-level courses in a language other than English

French, Italian and Spanish
DRAM 1F93 or ENGL 1F91 or a 1F90-level course in another language

General Studies
Consult the dean of humanities

Germanic and Slavic studies
DRAM 1F93 or ENGL 1F91 or a 1F90-level course in another language

History
One 1F90-level course chosen from FREN, GERM, ITAL, LATI, RUSS, or SPAN; or FREN 1F80 with B grade

Integrated studies:
Consult the dean of humanities

Liberal studies
One 1F90-level course in a language other than English or both of GREE 1F00 and LATI 1F00

Music

One 1F90-level or two 1F00-level courses in a language other than English

Philosophy

One 1F90-level course or two 1F00-level courses in a language other than English

Theatre

FREN 1F80 or 1F90

Visual arts

One of FREN 1F80 or any 1F90-level or two 1F00-level courses in a language other than English

Students seeking exemption or alternatives require the approval of the dean of humanities.

Year 1 literacy test requirement

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 who will have completed two Brock credits prior to September 1988.

Failure to do so 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 (\$80) and several reading programs are offered by the Brock Counselling Centre, Room 411 in the Schmon Tower.

Core and context

The core and 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 at least one credit from each of the three groupings during their first ten credits (see degree requirements, page 25).

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

Humanities context courses

- Canadian studies 1F91
- Classics (any two of) 1P91, 1P92, 1P93, 1P95, 1P97
- Drama 1F93 (see Fine arts)
- English 1F91, 1F99
- Film 1F94 (see Fine arts)
- French 1F90
- German 1F90, 1F96, both of 1P93/1P94
- Greek 1F90
- *History 1F95**, both of 1P92/1P93
- Italian 1F90, 1F95
- Latin 1F90
- ***Liberal studies 1F95
- Music 1F00, 1F10, 1F50 (see Fine arts)
- Philosophy 1F90, 1F91, 1F93, 1F94
- Russian 1F90, 1F95
- Spanish 1F90, 1F95, 1F96
- Visual arts 1F90

Social Sciences context courses

- Economics, both of 1P91/1P92
- *Geography 1F90
- *History 1F95**, both of 1P92/1P93
- Politics 1F90
- Psychology 1F90
- Sociology 1F90
- Urban and Environmental Studies 1F90

Sciences context courses

- Astronomy 1F00 (see Physics department)
- Biology 1F25, 1F90
- Chemistry 1F85, 1F93
- *Geography 1F91
- Geology 1F90, 1F95
- Physics 1F20, 1F90
- Science 1F20 (see Chemistry department)

*In cases where subjects are listed under two categories, only one of the

requirements may be satisfied by that course (e.g. if Geography 1F90 is taken to fulfill the requirement for the social sciences option, Geography 1F91 may not be taken to fulfill the sciences requirement).

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

***Enrolment may be limited.

Where the requirement may be satisfied by two half credits, both must be from the same subject i.e. Economics 1P91 and History 1P92 would not satisfy the social sciences context requirement whereas HIST 1P91/1P92 or ECON 1P91/1P92 would.

Course load

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 courses or their equivalent. In the spring evening or summer day sessions, the normal load is one course. Permission to take extra courses 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 per cent) 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 or APLS) may be required to take a reduced course load.

Mature entry students must complete two credits with an average of 60 per cent 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. Upon completion of two credits with an average of 65 per cent, degree credit status may be granted.

Academic Programs and Regulations

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.

Limited enrolment courses/programs

Some courses/programs are subject to enrolment limitations. Consult departmental entries in the calendar and the *Undergraduate Registration Information and Class Timetable* for details.

Registration and withdrawal

Students are officially registered for courses only through the Office of the Registrar by the completion of a registration form and the payment of the appropriate fees within the formal registration periods. Students whose cheques are returned NSF (not sufficient funds) will be deregistered without further notice. (See page 21.)

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.

A student may withdraw in good standing from a course within the period established each term (refer to pages 4 - 8). Withdrawals are effective as of the date that the Office of the Registrar receives notification in writing of the student's intention to withdraw. Withdrawals received after the last date for withdrawal without academic penalty will not be processed. While it is a courtesy to inform the instructor of withdrawal from a course, this does not constitute official withdrawal from either a course or the University. It should be noted that

failing or withdrawing from a first term half course may necessitate withdrawal from the subsequent term half course. This is the student's responsibility and is not done automatically; if in doubt, consult the Office of the Registrar.

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 complete all the term 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 per cent of the final grade. 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 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.

Grades

The following grades are awarded for undergraduate courses:

A 82, 85, 88, 92, 95, 98, 100
An A grade is awarded for excellent, comprehensive, accurate work which demonstrates an exceptional flair for the subject.

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

C 62, 65, 68
A C grade represents work of adequate quality which suffers from incompleteness or inaccuracy.

D 50, 52, 55, 58
A grade of D is given where the minimum requirements of a course are barely satisfied.

F 45 or lower
A grade of F 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 29)

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

UN Unsatisfactory: used for work terms and non-credit PHED/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 re-register 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 In-service and Pre-service College 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.

Transcripts

Requests for official transcripts of a student's academic record must be made to the Office of the Registrar. The fee is \$2 for the first copy and \$1 for each additional copy on the same order. It normally takes one week to process each order.

Examinations

Mid-term and final examinations are compulsory in all courses numbered 1(alpha)00 - 1(alpha)99. Final or mid-year 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 (OOF). In case of illness, a medical certificate 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 session half courses; no later than the summer day examination period for fall/winter session full courses and winter term half courses; no later than the fall term half course final examination period for spring evening and summer day 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 per cent 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 per cent 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.

Academic standing

Each student's academic progress will be reviewed by the sub-committee on academic standing at the end of each academic year or term as appropriate. The sub-committee will recommend to Senate the continuance in good standing, or otherwise, for each student.

The cumulative 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.

Number of Attempts

Each student will be allowed a maximum of 20 full course equivalent attempts to achieve the 15 credit pass degree or a maximum of 23 full course equivalent attempts to achieve the 20 credit honors 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.

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

To proceed to an honors degree, a student's attempted courses must not exceed the credits by more than three. A student in the 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.

Attempts allowed for second degree
 Student are allowed two attempts in addition to the number of courses required for the second degree.

Academic Programs and Regulations

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 credit or replace it with a departmentally approved substitute but it is not possible to replace a credit once a degree has been conferred. It is the student's responsibility to inform the Office of the Registrar at registration of the replacement course and the credit which it replaces.

Repeated courses

A student may repeat no more than two full courses and may repeat any course or half 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.

Degree categories

Honors standing terminology

First class: A minimum grade average of 80 per cent in all major credits, and 70 per cent in the remaining credits.

Second class: A minimum grade average of 70 per cent in all major credits, and 60 per cent in the remaining credits.

Third class: A minimum grade average of 65 per cent in all major credits, and 60 per cent in the remaining credits.

To proceed to year 4 (as an honors degree candidate), a student must have obtained at least second class honors standing in fifteen credits and must

have departmental approval. Applications are available in the Office of the Registrar and should be submitted by August 1.

Standing for graduation

Four classes of Bachelor's degrees are awarded.

First class honors degrees are granted to students who have completed a twenty 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, including transfer average, of 75 per cent or better, and a cumulative major average of 80 per cent or better.

Second class honors degrees are granted to students who have completed a twenty 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, including transfer average, of 65 per cent or better, and a cumulative major average of 70 per cent or better.

An honors degree student who does not achieve second class honors standing upon the completion of twenty 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 fifteen credit program with a minimum overall average, including transfer average, of 75 per cent. Transfer students require a 75 per cent transfer average and an overall average of 75 per cent in all Brock courses (see degree requirements, page 25).

Pass degrees are granted to students who have completed a fifteen credit program with a cumulative grade average of 60 per cent 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.

Application for graduation

Application for graduation at fall convocation, 1988, must be received by the Office of the Registrar by July 15, 1988. Application for graduation at spring convocation, 1989, must be received by the Office of the Registrar by February 13, 1989. Year 3 students who intend to proceed to year 4 must make application for year 4 admission. Application forms are available in the Office of the Registrar.

Holding of two degrees

Note: An individual may hold only one BA or BSc *at the pass level*, BEd, BPhEd or BRLS 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) fulfill all the course requirements for each degree; and
- ii) have taken at least the number of courses indicated below.

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 BAdmin (computer science option), three additional computer science credits must be included in the additional five credits required.

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

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 environmental studies. Since the programs are composed of degree credit courses, admission requirements are the same as for degree programs. Details appear in the relevant departmental entries of the calendar.

Holding of a degree and a certificate

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

- i) fulfill 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 twenty-one attempts for a pass degree and certificate or twenty-four attempts for an honors degree and certificate.

Academic counselling

Academic counselling 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 Registrar, Admissions or the Admissions officer.

Students who are currently enrolled at Brock who have questions regarding courses, programs, or academic regulations should consult the Assistant Registrar, Student Programs. Evening appointments can be arranged.

Students with questions regarding registration, withdrawal, examinations or graduation and their regulations should consult the Records and Registration officer.

The Associate Registrar, Admissions, Admissions officer, Assistant Registrar, Student Programs and the Records and Registration officer can be contacted in the Office of the Registrar, ST 300.

Auditor status

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.**

Letters of permission

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 Brock University 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 \$25 letter of permission application fee. 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 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 OF 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 Brock 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 one of the last five courses elsewhere.

Academic Programs and Regulations

Students completing their last course(s) on letters of permission in fall/winter sessions may apply to graduate at the following FALL convocation, and students completing their last course(s) on letter of permission in spring or summer sessions may apply to graduate at the following SPRING convocation (see page 30).

Challenge for credit

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

- (c) degree (see page 25). 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 (or its equivalent) in which he is or has been previously registered or which 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) Once a student has registered for a challenge course, he may not withdraw the challenge.
- (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; the fee is \$150 for a full course and \$75 for a half course.

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.

Petitions and appeals

A **petition** is a request that a regulation be waived on compassionate grounds or because of extenuating circumstances.

An **appeal** is a request that an academic decision (e.g. a grade or standing in a program) be changed, based on evidence supplied by the student.

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 chairperson 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 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 thirty days after the issuing of grades. For petitions, no fee is required.

Plagiarism

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.

- (g) Submitting whole or part of a computer program with or without minor modifications of 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 chairperson 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 chairperson together will interview the student and attempt to discover the precise circumstances. The case will then be referred to the dean of the appropriate division 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 notation 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 judgement will be final. Appeals should be submitted in writing to the committee, c/o the Registrar.

Part time Programs

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 evening, and summer day sessions.

The courses given in the evening or in the summer are equivalent to their

Academic Programs and Regulations

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 29.)

Professional certificate courses

Brock University offers a number of certificate courses in co-operation with professional associations whose designation is granted on the successful completion of the program.

For some of the programs, students will register for regular degree courses at the University. Credits obtained are then applied to the certificate or designation awarded by the professional association. Students intending to register in the following programs must apply for admission to both Brock University and to the association concerned.

Certificates requiring application to Brock University and to the professional association

Canadian Resident Appraiser (CRA)
Accredited Appraiser of the
Canadian Institute (AACI)
Institute of Chartered Accountants
of Ontario (CA)

Fellows Program of the Canadian
Credit Union Institute
(FCCUI)

Canadian Institute of Certified
Administrative Managers
(CAM) (FCAM)

Fellows Program of the Institute of
Canadian Bankers (FICB)

Fellows Program of the Insurance
Institute of Canada (FIIC)

Fellows Program of the Trust
Companies of Canada (FTCI)

Fellows Program of the Real Estate
Institute (FRI)

Information brochures for these programs may be obtained from the Office of the Registrar.

School of Administrative Studies

Officers of instruction

Dean

J.R. Hanrahan

Department of Accounting/Finance

Chairperson

T.H. Barnes

Professors

J.A. Edds
J.R. Hanrahan
H. Mann
U.P. Rege

Associate professor

T.H. Barnes

Assistant professors

M. Adams
H.D. Brown
J.A. Butko
M.E. Donnelly
F.M. Engert
S. Felton
G.M. Grand
R. Welch

Lecturer

I. Adamson

Instructor

A.W. Young

Co-ordinator of co-operative accounting program

A.W. Young

Department of Management/Marketing

Chairperson

E. Levanoni

Professors

W.D.K. Kernaghan
W.W. Liddell
K.E. Loucks
T. H. White

Visiting Professor

A.J.R. Smith

Associate professors

B.J. Austin
E. Levanoni
H.B.W. Metcalfe
H.W. Prout
R.H. Rotenberg
C.A. Sales
J.D. Whitehead
P. Yannopoulos

Assistant professors

C.W. Cullen
T.M. Mulligan
W.A. Stewart
M.J. Thomas

Lecturers

S.S. Broderick
J. Campling
B. Davis
S. Edgett
A. Mcir

General information

Department of accounting and finance
Mackenzie Chown complex A207

Department of management and marketing
Mackenzie Chown complex A240

The program in Administrative Studies is designed for students wishing to pursue careers in business, government and the accounting profession. Although the program is professionally oriented, it is based on the social sciences, particularly in years 1 and 2. Its purpose is to provide students with a strong academic background as well as to prepare them for careers in the broad field of administration.

Honors program

The minimum grade requirement for admission to the administrative studies program is a 65 per cent average from Ontario grade 13 or equivalent. The curriculum in administrative studies is

offered only as an honors (four year) program. On successful completion of the program, the degree of Bachelor of Administration (BAdmin) is awarded. The requirement for graduation is a minimum grade average of 70 per cent in all ACTG/FNCE/MGMT/MKTG credits and all other required major credits and a grade average of 60 per cent in the remaining credits. In accordance with academic regulations, each student will be allowed a maximum of 23 full course equivalent attempts to achieve the 20 course honors degree.

Students who do not achieve honors standing in year 2 may seek a degree in another field without loss of credit, and/or may continue to take courses in administrative studies under one of the University's options for the arts or science degrees. A maximum of five credits toward a pass degree and seven credits toward an honors degree in arts or science may be taken from courses given by the School of Administrative Studies (See General Studies section).

All students, with the exception of those in the co-op accounting program, should take the courses in the order prescribed below, i.e. all year 1 courses should be taken before year 2 courses, and so on.

All administrative studies students are required to take a number of core courses. In year 3, and primarily in year 4, students may specialize in one of the optional areas. No student may take more than two of ACTG 4V90-4V95, FNCE 4V90-4V95, MGMT 4V90-4V95, MKTG 4V90-4V95. Please consult the department for details.

Students who wish to take a general program in business administration should choose the general management option. Students who wish to pursue graduate work in administration should consult the dean for advice in selecting courses.

Students contemplating a career in the civil service are encouraged to become familiar with a language other than

Administrative Studies

English (normally French).

Year 1

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

**Note.* Students having two or more grade 13 MATH credits with an average mark of at least 75 per cent may be exempted from MATH 1P60. ECON 2P90, MATH 2P60 or any other ACTG/FNCE/MGMT/MKTG course in proper sequence must be substituted for MATH 1P60.

Year 2

ACTG 2P53/2P54; MGMT 1P94/1P95, 2P40; MATH 1P98; MATH 2P60 or ECON 2P90; ECON 2P23; one science or humanities context credit (whichever was not taken in Year 1).

Note:

In the administrative studies program, MGMT 1P91/1P92 (191hc/192hc) are prerequisites for all administrative studies courses except MGMT 1P94, 1P95, 2P40 and 2P82. MGMT 1P95 is a required course for BAdmin and combined administrative studies major programs. ACTG 2P53(253hc) is a prerequisite for ACTG 2P54 and all other courses in administrative studies numbered 2(*alpha*)90 or above. Students planning to take upper level economics courses should consult the department of Economics before selecting elective courses.

Students interested in the computer science option should note that year 2 of that option differs from all other programs. Students interested in the quantitative analysis option should take MATH 2P60 rather than ECON 2P90.

Computer Science option, Year 2

ACTG 2P53/2P54; COSC 1P01/1P04; ECON 2P23; MATH 1F65, 1P98; one science or humanities context credit (whichever was not taken in year 1).

In year 3 or year 4 of their studies, students in administrative studies may concentrate their courses in various disciplines or functional areas of

business. These are listed below as 'options'.

Accounting

Year 3

ACTG 3P56/3P57
FNCE 3P92/3P93
MGMT 3P30/3P50
MGMT 3P41/3P42
MKTG 3P22/3P24

Year 4

ACTG (3P53/3P54) or 4P54
ACTG 3P60/4P60
ACTG 4P52
ACTG 4P55/4P56
MGMT 4P85/4P86

*one or two half credits, depending on choice of ACTG 3P53/3P54 or 4P54.

*NOTE: Students planning to pursue the C.A. designation should take ACTG 3P53/3P54 and 4P53. Students planning to pursue the C.M.A. designation should take ACTG 4P54, MGMT 4P12 and one half credit in ACTG/FNCE/MGMT/MKTG. Students interested in other professional accounting designations (such as C.G.A.) should consult the chairperson of the department.

Computer Science

Year 3

COSC 2P03/2P04
FNCE 3P92/3P93
MGMT 2P40
MGMT 3P41/3P42
MKTG 3P22/3P24
MATH 2P60

Year 4

COSC 3F00
COSC 3P32
MGMT 3P30/3P31
MGMT 3P58/4P58 or
MGMT 3P59/4P59
MGMT 4P12
MGMT 4P85/4P86

Finance

Year 3

FNCE 3P92/3P93

MGMT 3P30/3P50
MGMT 3P41/3P42
MKTG 3P22/3P24
One elective credit

Year 4

FNCE 4P02/4P06
Three of FNCE 4P04, 4P05, 4P07, 4P08, 4P09
MGMT 4P85/4P86
One half credit in ACTG/FNCE/MGMT/MKTG
One elective credit

General management

Year 3

FNCE 3P92/3P93
MGMT 3P30/3P50
MGMT 3P41/3P42
MKTG 3P22/3P24
One elective credit

Year 4

MGMT 4P85/4P86
Three credits in ACTG/FNCE/MGMT/MKTG
One elective credit

Human resource management

Year 3

FNCE 3P92/3P93
MGMT 3P30/3P50
MGMT 3P41/3P42
MKTG 3P22/3P24
One elective credit

Year 4

MGMT 4P62/4P63
MGMT 4P79
MGMT 4P85/4P86
Three of MGMT 4P61, 4P65, 4P66, 4P67, 4P68, 4P69
One elective credit

Marketing

Year 3

FNCE 3P92/3P93
MGMT 3P30/3P50
MGMT 3P41/3P42
MKTG 3P22/3P24
One elective credit

Year 4

MGMT 4P85/4P86
 MKTG 4P22
 Four of MKTG 4P23, 4P25, 4P26,
 4P27, 4P28, 4P29, 4P31, 4P33
 One half credit in ACTG/FNCE/
 MGMT/MKTG
 One elective credit

Public Administration

Year 3

FNCE 3P92/3P93
 MGMT 3P41/3P42
 MGMT 3P50/POLI 3P65 or MGMT
 3F51
 MKTG 3P22/3P24
 One elective credit

Year 4

MGMT 3P30
 MGMT 4P40
 MGMT 4P52/4P54
 POLI 4P50
 Two of POLI 3P52/4P01/4P11/4P14/
 4P15/4P51/4P53/4P65/4P81/4V10-
 4V19;
 One credit in ACTG/FNCE/MGMT/
 MKTG
 One half credit elective.

Quantitative analysis

Year 3

FNCE 3P92/3P93
 MGMT 3P30/3P50
 MGMT 3P41/3P42
 MGMT 3P58/4P58 or
 MGMT 3P59/4P59
 MKTG 3P22/3P24

Year 4

MGMT 3P58/4P58 or
 MGMT 3P59/4P59
 MGMT 4P85/4P86
 One and one half credits in ACTG/
 FNCE/MGMT/MKTG
 One half credit elective chosen in
 consultation with the dean of the
 School
 One elective credit

**Bachelor of Administration for
 students holding other degrees**

Students holding a degree where the major area of concentration is other than business, commerce, or administrative studies with a minimum overall average of 65 per cent and with at least ten credits acceptable to Brock University will normally receive ten full unspecified credits towards the BAdmin degree at Brock. These students will be required to complete the following program of courses with satisfactory honors standing in accordance with School requirements.

ECON 1P91/1P92
 MGMT 1P95
 MATH 1P98
 ACTG 2P53/2P54
 FNCE 3P92/3P93
 MGMT 3P30
 MGMT 3P41/3P42
 MGMT 4P85/4P86
 MKTG 3P22/3P24
 Two and one half credits in ACTG/
 FNCE/ MGMT/MKTG

Students who are granted credit in any of the above courses must, in consultation with the dean, complete a program consisting of at least ten credits that includes all of the core courses above, or substitute courses approved by the dean.

For graduation a minimum overall grade average of 70 per cent is required in the above courses.

Combined honors programs

Combined honors programs leading to an honors Bachelor of Arts degree are available in administrative studies and economics and administrative studies and politics. These programs are described below.

**Administrative Studies and
 Economics**

Year 1

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

Year 2

ACTG 2P53/2P54; ECON 2P21 or
 2P23 (with permission of the depart-
 ment); ECON 2P22, 2P90; MGMT
 3F51 or MGMT 3P50/POLI 3P65;
 MATH 1P98; one science or humani-
 ties context credit (whichever was not
 taken in year 1).

Year 3

ECON 2P31/2P32; one economics
 credit; FNCE 3P92/3P93; MGMT
 3P41/3P42; MKTG 3P22/3P24.

Year 4

ECON 3P90, 3P91, 4P13, 4P14;
 MGMT 1P95/2P40; one credit in
 ACTG/FNCE/ MGMT/MKTG; one
 elective credit.

Administrative Studies and Politics

Together with politics, the School offers a special program leading to an honors BA in administrative studies 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 (French 1F90
 recommended for those with necessary
 prerequisites).

Administrative Studies

Year 2

ACTG 2P53/2P54; MGMT 2P40; POLI 2P81 or MGMT 1P95; MATH 1P98; POLI 2F12; one additional credit in politics, usually POLI 2F90 (POLI 2P01 and one of POLI 3P04, 3P05, 4P01, 4P02 and 4P03 may be taken in place of POLI 2F90); one half credit elective (ECON 2P21 recommended).

Year 3

MGMT 3F51 (or MGMT 3P50 and an optional MGMT half credit), MGMT 3P41/3P42; two credits in politics chosen from POLI 3P11, 3P15, 3P18, 3P26, 3P27, 3P33, 3P52, 3P65 and 3P66; one elective credit (ECON 3P14/3P15 recommended).

Year 4

FNCE 3P92/3P93; MGMT 4P54 and one of MGMT 4P40, 4P52, 4P61, 4P62, 4P63, 4P66, 4P67, 4P68, 4P69, 4P72; POLI 4P50; POLI 4P81 (or 3P81); one credit chosen from POLI 4P01, 4P11, 4P14, 4P15, 4P51, 4P53, 4P65 and 4V10-4V19; one elective credit.

Bachelor of Business Economics

See separate calendar entry under Business Economics.

Co-operative program in accounting

The School of Administrative Studies offers a fully accredited co-op accounting program in collaboration with the Institute of Chartered Accountants of Ontario. Students are placed in a wide variety of locations throughout Ontario. The School expects to take upwards of 40 students each year. Students must register with the Institute of Chartered Accountants of Ontario on a conditional basis at the beginning of the first work period and accumulate a minimum of three years' work experience, one year of which must follow the completion of the BAdmin degree. In addition to the current fees for courses in academic study terms, students are

assessed an annual administrative fee of \$200.00, due and payable in September.

Admission to the program is on the basis of grade 13 marks and personal interviews usually conducted in May and early June. The basic requirement is an average of 80 per cent or more in Grade 13 subjects. Promising students with lower grades may be accepted. For additional information, prospective students should contact the co-ordinator.

Description of courses

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

ACTG 2P53

Introduction to financial accounting
An introduction to 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. Not open to students with credit in ADMI 253hc.

Lectures, 3 hours per week.

ACTG 2P54

Introduction to management accounting

An introduction to accounting for managerial decision-making, including relevant data, various cost accounting systems, and break-even analysis. Prerequisite: ACTG 2P53(253hc). Not open to students with credit in ADMI 254hc.

Lectures, 3 hours per week.

ACTG 3P53

External auditing I

This is the first semester of two dealing with external auditing (public accounting). It covers the following: the role of public accounting; professional and legal responsibilities of public account-

ants; audit evidence; principles and evaluation of external control; interim and financial statement audits. Not open to students with credit in ADMI 353hc.

Lectures, seminar, 3 hours per week.

ACTG 3P54

External auditing II

This course builds on ACTG 3P53(ACTG353hc) and covers the following: audit reports (including reservations); audit testing and statistical sampling; auditing in an environment of EDP; development of audit programs; review engagements. Prerequisite: ACTG 3P53(353hc). Not open to students with credit in ADMI 354hc.

Lectures, seminar, 3 hours per week.

ACTG 3P55

Advanced management accounting

An examination of the uses of accounting data for management needs, including cost determination, planning and control, cost allocation, and measuring divisional performance. Prerequisite: ACTG 2P54(254hc). Not open to students with credit in ADMI 351hc or 355hc.

Lectures, tutorial, 3 hours per week.

*To be offered for the last time in Spring Evening 1988.

ACTG 3P56

Intermediate financial accounting I

This is the first semester of intermediate financial accounting. A study of the objectives of financial statements, including the theoretical measurement of income as well as the accounting measurement and disclosure of assets. Prerequisite: ACTG 2P53/2P54(253hc/254hc).

Not open to students with credit in ADMI 350 or 356hc.

Lectures, 3 hours per week.

ACTG 3P57

Intermediate financial accounting II

An intermediate financial accounting course which considers measurement and reporting problems relating to liabilities and equities and an examina-

tion of alternative accounting models.
Prerequisite: ACTG 3P56(356hc).
Not open to students with credit in
ADMI 350 or 357hc.
Lectures, 3 hours per week.

ACTG 3P60

Cost and managerial accounting
An examination of the systems devised
to implement management planning
and control with emphasis on cost
accounting, product costing, allocation,
and cost behavior patterns.
Prerequisite: ACTG 2P54.
Not open to students with credit in
ACTG 3P55, ADMI 351hc or 355hc.
Lectures, 3 hours per week.

ACTG 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.
Prerequisite: restricted to year 4
students; consent of the dean and
supervising faculty member.
Not open to students with credit in
ADMI 490hc/491hc.

ACTG 4P52

Advanced accounting problems
Inter-corporate investments, prepara-
tion of consolidated financial state-
ments, foreign currency translation,
estate and trust accounting, bankruptcy,
liquidation, receivership and municipal
accounting.
Prerequisite: ACTG 3P56/3P57(356hc/
357hc).
Not open to students with credit in
ADMI 452hc.
Lectures, 3 hours per week.

ACTG 4P53

**Advanced accounting
theory I**
A seminar course designed to aid
students in understanding the objec-
tives and uses of financial accounting
information, and the environment in
which financial accounting operates.
Topics may include: accounting theory
construction, objectives of external
reporting, setting accounting standards,

GAAP, current value accounting, the
implications of efficient capital markets
for accounting, the impact of account-
ing regulations and the positive theory
of accounting.

Prerequisite: ACTG 3P56/3P57
(356hc/357hc); FNCE 3P92/
3P93(392hc/393hc).

Not open to students with credit in
ADMI 453hc.
Seminar, 3 hours per week.

ACTG 4P54

Management auditing
This course is directed to students who
do not plan to become chartered
accountants but seek instruction in the
basic nature and purpose of
'operational' or 'management' auditing
as practised by internal auditors in
industry and government. Topics
include: auditing standards, audit
evidence, internal control principles
and evaluation, reporting, auditing in
an environment of EDP, statistical
sampling, auditing typical enterprise
functions.

Prerequisite: MGMT 1P94(194hc),
ACTG 2P54(254hc), MKTG
3P22(322hc), MGMT 3P41(341hc).
Lectures and discussions, 3 hours per
week.

ACTG 4P55

Canadian income tax I
The principles underlying federal
income taxation are examined through
an analysis of the Income Tax Act,
R.S.C. as amended. Topics include
administration, liability for income tax,
tax conventions, corporate and personal
income tax computation.

Prerequisite: ACTG 2P53/2P54
(253hc/254hc).

Not open to students with credit in
ACTG 4P51.
Lectures, 3 hours per week.

ACTG 4P56

Canadian income tax II
This course is of special interest to
students majoring in accounting. It will
provide students with an opportunity to
examine in detail specialized areas of
income tax.

Prerequisite: ACTG 451hc or
4P55(455hc).
Lectures, 3 hours per week.

ACTG 4P60

Advanced managerial accounting
A study of management accounting
relating to the identification, measure-
ment and communication of account-
ing, information. Topics include
managerial decision making for
control, planning and performance
evaluation.

Prerequisite: ACTG 3P60.

Not open to students with credit in
ACTG 3P55, ADMI 351hc or 355hc.
Lectures, discussions, case studies, 3
hours per week.

ACTG 4P65

**Problem solving, integration and
application**

An integrated examination of applied
and theoretical issues in the various
accounting subdisciplines such as
financial and management accounting,
auditing and taxation in the context of a
wider view of the organization.
Prerequisite: ACTG 4P52, 4P55, 4P60
and either ACTG 3P53 or 4P54.
Lectures, discussions, case studies,
term projects, 3 hours per week.

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.
Prerequisite: restricted to year 4
students; consent of the dean and
supervising faculty member.
Not open to students with credit in
ADMI 490hc/491hc.

ACTG 4V90-4V95

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.
Prerequisite: restricted to year 4
students; consent of the chairperson
and supervising faculty member.
Lectures, seminar, discussions, 3 hours
per week.

Administrative Studies

FNCE 3P92

Introduction to finance I

The role of the finance function in the business environment is introduced. Students are exposed to 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.

Prerequisite: ECON 1P91/1P92 (191hc/192hc), MATH 1P98(198hc), ACTG 2P53(253hc).

Not open to students with credit in ADMI 392hc.

Lectures, seminar, 3 hours per week.

FNCE 3P93

Introduction to finance II

Drawing upon the material covered in FNCE 3P92(392hc), students are introduced to criteria used in financing decisions. Specific topics include: the cost of various sources of capital, hybrid securities, capital structure, dividends, leasing, and working capital.

Prerequisite: FNCE 3P92(392hc).

Not open to students with credit in ADMI 393hc.

Lectures, seminar, 3 hours per week.

FNCE 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.

Prerequisite: restricted to year 4 students; consent of the dean and supervising faculty member.

Not open to students with credit in ADMI 490hc/491hc.

FNCE 4P02

Corporate financial policy

This case course builds on FNCE 3P92/3P93(392hc/393hc). Students are provided with an opportunity to develop further and apply their understanding of the material in FNCE 3P92/3P93(392hc/393hc) to situations encountered in a variety of business decision settings.

Prerequisite: FNCE 3P92/3P93 (392hc/393hc).

Not open to students with credit in ADMI 402hc.

Seminars and case discussions, 3 hours per week.

FNCE 4P04

Investment analysis

The financial instruments frequently traded in organized securities markets are studied in terms of their risk and return implications for the issuer and owners. Valuation models for these securities are critically reviewed.

Alternate investment strategies are explored in terms of appropriate portfolios of securities for various individual and institutional investors.

Prerequisite: FNCE 3P92/3P93 (392hc/393hc).

Not open to students with credit in ADMI 404hc.

Lectures, 3 hours per week.

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.

Prerequisite: FNCE 3P92/3P93 (392hc/393hc).

Not open to students with credit in ADMI 405hc.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: FNCE 3P92/3P93 (392hc/393hc).

Not open to students with credit in ADMI 406hc.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: FNCE 3P92/3P93 (392hc/393hc).

Lectures, seminar, 3 hours per week.

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.

Prerequisite: FNCE 3P92/3P93 (392hc/393hc).

Lectures, seminar, 3 hours per week.

FNCE 4P09

Portfolio management

Theory and practice of portfolio management for the purpose of selecting various financial instruments to meet the preferences of investors. It covers diversification effects, evaluation of portfolio performance, use of portfolio models and timing strategies in portfolio selection.

Prerequisite: FNCE 4P04(404hc).

Lectures, seminar and case studies, 3 hours per week.

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.

Prerequisite: restricted to year 4 students; consent of the dean and supervising faculty member.

Not open to students with credit in ADMI 490hc/491hc.

FNCE 4V90-4V95

Topics in finance I

A course structured by a faculty member having specialized interest in an area within the discipline, normally offered on an experimental basis. Prerequisite: restricted to year 4 students; consent of the chairperson and supervising faculty member. Lectures, seminar, discussions, 3 hours per week.

MGMT 1P91

Introduction to business

A survey of the five basic business functions: marketing, production, accounting and finance, personnel, information processing. Students are also introduced to the basic concepts of organizing, forms of business enterprises and the need for common goals and objectives in organizations. Not open to students with credit in ADMI 191 or 191hc. Lectures, seminar, 3 hours per week.

MGMT 1P92

Introduction to management

The role of the manager within the organization is examined, with particular emphasis on the basic functions of planning, organizing, staffing, directing, and controlling. Prerequisite: MGMT 1P91(191hc) or permission of instructor. Not open to students with credit in ADMI 191 or 192hc. Lectures, seminar, 3 hours per week.

MGMT 1P94

Introduction to computing
(also offered as COSC 1P91)

An introduction to computers and computer programming for students not intending to major in computer science. Students will choose to study one of a number of programming languages by selecting the appropriate language tutorial. Students in the course will develop a number of computer programs. A computer science major or combined major may not hold credit for this course. May not normally be taken concurrently with or after receiving credit for

COSC 1P01.

Not open to students with credit in COSC 1P93 or COSC(MGMT)1P94. Lectures, 2 hours per week, lab, 2 hours per week, tutorial, 1 hour per week.

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. Prerequisite: Open only to B. Admin. and combined honors administrative studies students. Lectures, lab, 3 hours per week.

MGMT 2P40

Commercial law

An introduction to the basic legal considerations for the business organization. Not open to students with credit in ADMI 240hc. Lectures, 3 hours per week.

MGMT 2P82

Business ethics

(also offered as PHIL 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. Not open to students with credit in ADMI 282hc. Lectures, seminar, 3 hours per week.

MGMT 3F51

Canadian public administration
(also offered as POLI 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. Not open to students with credit in ADMI(MGMT) 320 or MGMT(POLI) 350. Lectures, seminar, 3 hours per week

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 workforce management. Prerequisite: MATH 1P98(198hc) and either MATH 2P60(260hc) or ECON 2P90(290hc). Not open to students with credit in ADMI 330hc. Lectures, seminar, case discussions, 3 hours per week.

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. Prerequisite: MGMT 3P30(330hc). Not open to students with credit in ADMI 331hc. Lectures, seminar, 3 hours per week.

MGMT 3P41

Organizational behavior

Micro aspects of formal organizations from a behavioral science perspective.

Administrative Studies

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. Prerequisite: MGMT 1P91/1P92 (191hc/192hc) or permission of the instructor.

Not open to students with credit in ADMI 341hc or SOCI 344hc or 341hc. Lectures, 3 hours per week.

MGMT 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.

Prerequisite: MGMT 3P41(341hc). Not open to students with credit in ADMI 340hc or SOCI 343hc or 342hc. Lectures, 3 hours per week.

MGMT 3P50

Introduction to public administration

(also offered as POLI 3P50) 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.

Prerequisite: POLI 1F90(190). Not open to students with credit in MGMT(POLI)3F51 or MGMT 320(POLI 351).

Lectures, seminar, 3 hours per week.

MGMT 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.

Prerequisite: MATH 2P60(260hc). Not open to students with credit in ADMI 358hc.

Lectures, 4 hours per week.

Note:

MGMT 3P58/4P58 and 3P59/4P59 are offered in alternate years.

MGMT 3P59

Operations research methods B

(also offered as MATH 3P59) Principles of modeling; decision theory; subjective probability and Bayesian statistics; simulation; sampling theory; design and analysis of experiments; discussion and analysis of selected cases.

Prerequisite: MATH 2P60(260hc) or permission of the instructor.

Not open to students with credit in ADMI 359hc.

Lectures, 4 hours per week.

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. Specifically, the course introduces students to the identification, development, and implementation of corporate strategy.

Prerequisite: ECON 1P91/1P92 (191hc/192hc), MGMT 1P91(191hc), ACTG 2P53(253hc), MKTG 3P22(322hc), MGMT 3P41(341hc), FNCE 3P92/3P93 (392hc/393hc).

Not open to students with credit in ADMI 381hc or MGMT 481 or 4P85/4P86(485hc/486hc).

Seminar, cases, 3 hours per week.

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.

Prerequisite: restricted to year 4 students; consent of the dean and supervising faculty member.

Not open to students with credit in ADMI 490hc/491hc.

MGMT 4P12

Information systems

Principles and practice of systems analysis and design; project selection; control of EDP operations; basics of MIS.

Prerequisite: MGMT 1P94(194hc) or 1P95; ACTG 2P53/2P54(253hc/254hc), MKTG 3P22(322hc), MGMT 3P41(341hc) or permission of the instructor.

Not open to students with credit in ADMI 412hc.

Lectures and case discussions, 3 hours per week.

MGMT 4P40

Administrative law

The focus of this course is on judicial control of administrative action, with particular reference to the review of administrative decisions made by federal and provincial public authorities in Canada which affect business and other organizations.

Not open to students with credit in ADMI 440hc.

Lectures, seminar and cases, 3 hours per week.

MGMT 4P52

Personnel and financial administration in the public sector

(Also offered as POLI 4P52) This course focuses on 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.

Prerequisite: year 4 honors standing; MGMT(POLI) 3F51 or MGMT 320(POLI 351) or permission of the instructor.

Not open to students with credit in MGMT(POLI) 448hc or POLI 452. Seminar, 3 hours per week.

MGMT 4P54

Business-government relations (also offered as POLI 4P54)

This course focuses on the manage-

ment 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. Prerequisite: year 4 honors standing; MGMT(POLI) 3F51 or MGMT 320(POLI 351) or permission of the instructor.

Not open to students with credit in MGMT(POLI) 449hc or POLI 452. Seminars, 3 hours per week.

**MGMT 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.

Prerequisite: MGMT 3P58(358hc) or permission of the instructor. Not open to students with credit in ADMI 458hc.

Lectures, 4 hours per week.

**MGMT 4P59
Operations research applications B**

(also offered as MATH 4P59) Applications of modeling; 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.

Prerequisite: MGMT 3P59(359hc) or permission of the instructor. Not open to students with credit in ADMI 459hc.

Lectures, 4 hours per week.

MGMT 4P61

Strategies for organizational change
An analysis of organizational change at the environmental, business and group levels; theoretical and pragmatic approaches available to the general manager for shaping and leading an organization.

Prerequisite: MGMT 3P41/3P42 (341hc/342hc).

Not open to students with credit in ADMI 461hc.

Lectures, seminar, case discussions, 3 hours per week.

MGMT 4P62

Human resource management

Manpower recruitment, selection and training, wage and salary administration, and the design and administration of benefit programs.

Prerequisite: MGMT 3P41/3P42 (341hc/342hc).

Not open to students with credit in ADMI 462hc.

Lectures, seminar, 3 hours per week.

MGMT 4P63

Industrial and labor relations

An evaluation of various industrial relations theories and approaches applied in the Canadian setting; an examination of major elements in the Industrial Relations System and factors shaping them; the interrelationships among the various parts of the system and how emerging trends are influencing them. A critical assessment of various frameworks of industrial relations systems, theories of the labor movement, and of collective bargaining is presented.

Prerequisite: MGMT 3P41/3P42(341hc/342hc) or permission of the instructor.

Not open to students with credit in ADMI 463hc.

Lectures, seminar, 3 hours per week.

MGMT 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.

Prerequisite: MGMT 3P41/3P42 (341hc/342hc).

Not open to students with credit in ADMI 465hc.

Lectures, seminar, 3 hours per week.

MGMT 4P66

Motivation and compensation management

A review of motivation theories and their application. An examination of compensation theory and practice including pay and benefits determination, job evaluation and the overall planning and administration of compensation and reward systems.

Prerequisite: MGMT 3P41/3P42 (341hc/342hc).

Not open to students with credit in ADMI 466hc.

Lectures, seminar, 3 hours per week.

MGMT 4P67

Training and development

An intensive study of 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.

Prerequisite: MGMT 3P41/3P42 (341hc/342hc).

Not open to students with credit in ADMI 467hc.

Lectures, seminar, 3 hours per week.

MGMT 4P68

Leadership and supervision

A study of 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

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managerial roles.

Prerequisite: MGMT 3P41/3P42 (341hc/342hc).

Not open to students with credit in ADMI 468hc.

Lectures, seminar, 3 hours per week.

MGMT 4P69

Staffing and evaluation

An examination of 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.

Prerequisite: MGMT 3P41/3P42 (341hc/342hc).

Not open to students with credit in ADMI 469hc.

Lectures, seminar, 3 hours per week.

MGMT 4P72

Labor law

Federal and provincial statutes governing certification, negotiation, conciliation and arbitration, unfair labor/management practices, jurisdiction and control of trade labor unions and other employee collectives; common law effects on management action. Canadian and Ontario Labor Relation Boards' practices.

Not open to students with credit in ADMI 472hc.

Lectures, seminar, 3 hours per week.

MGMT 4P79

Personnel management research

The nature and scope of personnel management research as a managerial tool. The course includes an examination of the means of assessing individual, group and organizational performance; the logic of research designs and analyses; and the organization and administration of personnel research programs.

Prerequisite: MGMT 3P41/3P42 (341hc/342hc).

Not open to students with credit in ADMI 395hc, 396hc, 479hc.

Lectures, seminars, 3 hours per week.

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.

Prerequisite: ACTG 2P54(254hc), FNCE 3P93(393hc), MGMT 3P30(330hc), 3P42(342hc) and MKTG 3P24(324hc); restricted to year 4

BAdmin students.

Not open to students with credit in MGMT 481 or MGMT 485hc.

Lectures, seminar, case discussions, 3 hours per week, plus major field work project.

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.

Prerequisite: MGMT 4P85 (MGMT 4P85 and 4P86 are to be taken in consecutive terms); restricted to year 4 BAdmin students.

Not open to students with credit in MGMT 481 or MGMT 486hc.

Lectures, seminar, case discussions, 3 hours per week, plus a continuation of the field work project from MGMT 4P85.

MGMT 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.

Prerequisite: restricted to year 4 students; consent of the dean and supervising faculty member.

Not open to students with credit in ADMI 490hc/491hc.

MGMT 4P92

Entrepreneurship

The integration of the skills, concepts, mental attitudes and knowledge relevant for creating and building new ventures. The focus is on the discovery and exploration of business opportuni-

ties and successful start up procedures.

Prerequisite: ACTG 2P54(254hc), FNCE 3P93(393hc), MGMT 3P30(330hc), MGMT 3P42(342hc), MKTG 3P24(324hc); or permission of the instructor.

Not open to students with credit in MGMT 4V92.

Lectures, seminar, case discussions, 3 hours per week.

MGMT 4P93

Management of small enterprises: operating problems and strategies

Creativity and innovation in adapting management skills to a small enterprise facing constraints in financial and physical resources and limitations on the owner-manager's time and skills.

Prerequisite: ACTG 2P54(254hc), FNCE 3P93(393hc), MGMT 3P30(330hc)(324hc), MGMT 3P42(342hc), MKTG 3P24(324hc); or permission of the instructor.

Not open to students with credit in MGMT 4V93.

Lectures, seminar, case discussions, 3 hours per week.

MGMT 4V90-4V95

Topics in public policy I

(also offered as ECON 4V80-4V89 and POLI 4V10-4V19)

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

1988-89:(4V90) **Topics in publicity policy I**

(also offered as ECON 4V80)

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.

Prerequisite: restricted to year 4 students; consent of the chairperson and supervising faculty member.

Seminars, discussion, guest lecturers, 3 hours per week.

1988-89:(4V91) **Topics in public policy II**

(also offered as ECON 4V81)

Public policy planning, analysis and implementation. The central focus will be on industrial, regional, social and science and technology policies.

Prerequisite: restricted to year 4

students; consent of the chairperson and supervising faculty member. Seminars, discussion, guest lecturers, 3 hours per week.
 1988-89:(4V94) **Public policy: advice and processes**
 (also offered as ECON 4V84 and POLI 4V14)
 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.
 Prerequisite: restricted to year 4 students; consent of the chairperson and supervising faculty member.
 Seminars, discussion, guest lecturers, 3 hours per week.

MKTG 3P22
Basic marketing
 An introduction to the marketing process; the role of marketing in society, environmental factors affecting the marketing process, consumer behavior, and the unique features of the Canadian market.
 Prerequisite: MGMT 1P91/1P92 (191hc/192hc) or permission of the instructor.
 Not open to students with credit in ADMI 322hc.
 Lectures, seminar, 3 hours per week.

MKTG 3P24
Marketing management
 An introduction to management of the marketing process. Each of the elements of the marketing mix is examined in detail along with their interrelationships.
 Prerequisite: MKTG 3P22(322hc).
 Not open to students with credit in ADMI 324hc.
 Lectures, seminar, case discussions, 3 hours per week.

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.
 Prerequisite: restricted to year 4 students; consent of the dean and

supervising faculty member.
 Not open to students with credit in ADMI 490/491hc.

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.
 Prerequisite: MKTG 3P24(324hc).
 Not open to students with credit in ADMI 422hc or MKTG 422hc.
 Lectures, seminars, case discussions, 3 hours per week.

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.
 Prerequisite: MKTG 3P24(324hc).
 Not open to students with credit in ADMI 423hc.
 Lectures, seminar, case discussions, 3 hours per week.

MKTG 4P25
Marketing policy
 An advanced course in marketing emphasizing the executive role in developing and applying market strategies. Computer simulation is employed to acquaint the student with problem-solving and managerial decision-making in applying marketing strategies.
 Prerequisite: MKTG 3P24(324hc).
 Not open to students with credit in ADMI 425hc.
 Lectures, seminar, 3 hours per week.

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.
 Prerequisite: MKTG 3P24(324hc).
 Not open to students with credit in ADMI(MKTG) 426hc.
 Lectures, seminars, case discussions, 3 hours per week.

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.
 Prerequisite: MKTG 3P24(324hc).
 Not open to students with credit in ADMI(MKTG) 427hc.
 Lectures, seminar, case discussions, 3 hours per week.

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.
 Prerequisites: MKTG 3P24(324hc).
 Not open to students with credit in ADMI(MTKG) 428hc.
 Lectures, seminar, case discussions, 3 hours per week.

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.
 Prerequisite: MKTG 3P22/3P24 (322hc/324hc).

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Not open to students with credit in ADMI 429hc.
Seminar, case discussions, 3 hours per week.

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.

Prerequisite: MKTG 3P24(324hc).

Not open to students with credit in ADMI 431hc.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: MKTG 3P24(324hc).

Lectures, seminar, 3 hours per week.

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.

Prerequisite: restricted to year 4 students; consent of the dean and supervising faculty member.

Not open to students with credit in ADMI 490hc/491hc.

MKTG 4V90-4V95

Topics in marketing I

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.

Prerequisite: restricted to year 4 students; consent of the chairperson and supervising faculty member.

Lectures, seminar, discussions, 3 hours per week.

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Officers of instruction

Chairperson
G.H. Irons

Associate professors
M. Richards
J.N. Sivell

Assistant professors
G.H. Irons
J.P. Kooistra

Lecturers
E.V. Harris
J.F. Kaethler

Sessional lecturers
J. Black
J.A. Cleland
J. Dormer
R. Soady

Director of non-credit programs
J.N. Sivell

Mackenzie Chown complex C409

Teaching English as a Second Language

The Brock program in the teaching of English as a second language (TESL) includes the study of the changes that have taken place in the English language; present theories of ESL instruction and the related field of linguistics; practical application of English language instruction; and the social, psychological, historical and descriptive features of the English language. The BEd portion of the TESL program encourages an application of 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.

The TESL program is offered in two stages. During the first three years of this program, the student will take courses for credit towards a pass BA degree. Following the completion of the BA, the student will take courses, for a BEd degree, which offer practical training in the teaching of English as a second language.

TESL/EDUC courses at the year 4 level are for credit towards the BEd degree only while all other courses are credited towards the BA degree.

Students proceeding towards a BA in the TESL program must complete a combined major in conjunction with one other humanities, social science, or science department.

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

Students whose first language is English, who do not have a grade 13 credit in a second language, must take at least one course in a second language during the first year of a TESL program. Further language courses are strongly recommended.

No more than five credits in TESL, administrative studies, education, physical education, and recreation and leisure studies are permitted within a BA or BSc program.

TESL/EDUC 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 College of Education calendar entry for the BEd Route I program.

Pass BA program

Year 1
TESL 1F91, LING 1F94*, one credit in second major area; two context credits**.

Year 2
TESL 2F50, TESL 2F60, two credits in second major area; one elective credit.

Year 3
TESL 3F92, 3F93, two credits in second major area; one elective credit.

*See Germanic and Slavic Studies.

**All three context credits must be completed within the first ten credits. If not satisfied by the introductory course in the second area and the first year electives, the missing component must be completed in year 2.

(TESL) BEd program

TESL/EDUC 4F00, TESL/EDUC 4F01, TESL/EDUC 4F02, TESL/EDUC 4F03, TESL/EDUC 4F04.

Description of courses

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

TESL 1F91 Introduction to second language acquisition

As an introduction to the field of second language acquisition, this course will examine various relevant theories of language learning. Topics discussed will include first language acquisition, comparing and contrasting first and second language, language and culture, contrastive analysis, error analysis, and numerous contemporary methods of language instruction.

Co-requisite: LING 1F94.

Lectures, seminar, 3 hours per week.

TESL 2F50 Introduction to the comparative phonetics of English and French (also offered as FREN 2F50)

Distinctive phonological features of French and English will be studied, with a view to aiding French and TESL

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students to make a comparative phonological analysis of, among other things, French and English.

Prerequisite: restricted to year 4 students; consent of the chairperson and supervising faculty member.
Prerequisite: TESL 1F91(191), or FREN 1F90 for French majors, or permission of the department.
Co-requisite: TESL 2F60 (no co-requisite for French majors).
Lectures, seminar, 3 hours per week.

TESL 2F60

Introduction to English grammar

An introduction to relevant issues in the theory of grammar. Following an overview of English syntax, semantic theories will be studied in relation to grammatical forms. Finally, in order to create a model for instructional procedure, the structural organization of sentences will be studied.
Prerequisite: TESL 1F91(191) or permission of the chairperson.
Co-requisite: TESL 2F50.
Lectures, seminar, 3 hours per week.

TESL 3F92

Culture and language

The interplay between learning English, teaching English and English cultural orientation. In order to allow an understanding of the gaps which occur in the language learning process when cultural differences are not taken into consideration, an analysis will be made of specific language acquisition skills which are affected by cultural interference.
Prerequisite: TESL 1F91(191), or permission of the chairperson.
Lectures, seminar, 3 hours per week.

TESL 3F93

Reading in a second language

Various methodologies for reading instruction. Fundamental principles and strategies for teaching and studying second-language reading will be presented. 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.

Prerequisite: TESL 1F91(191), 2F50(250), 2F60(260) or permission of the chairperson.
Lectures, seminar, 3 hours per week.

Note: TESL/EDUC 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 College of Education calendar entry for the Bachelor of Education route I program.

***TESL 4F00

Analysis of discourse

(also offered as EDUC 4F00)
Study of the various techniques and frameworks for the analysis of written and spoken discourse, with special reference to applications in second-language acquisition. Lectures will outline approaches to discourse analysis and related initiatives in communicative language-teaching methodology. Seminars will examine discourse analysis theories as well as corresponding pedagogical materials. Preparation of a practical project in discourse analysis.
Prerequisite: TESL 1F91(191), 2F50(250) or permission of the chairperson.
Co-requisites: TESL 4F01, 4F02, 4F03, 4F04 or permission of the chairperson. (Does not lead to Ministry of Education qualification to teach in the province of Ontario.)
Lectures, seminar, 3 hours per week.

***TESL 4F01

Advanced English grammar

(also offered as EDUC 4F01)
Application of syntactic principles outlined in TESL 2F60. Advanced grammatical analysis techniques applied to the teaching of short essays and research papers.
Prerequisites: TESL 1F91(191), 2F60(260) or permission of the chairperson.
Co-requisites: TESL 4F00, 4F02, 4F03, 4F04 or permission of the chairperson. (Does not lead to Ministry of Education qualification to teach in the

province of Ontario.)
Lectures, seminar, 3 hours per week.

***TESL 4F02

Individual project

(also offered as Educ 4F02)
An individually designed project, carried out through regular class meetings, and with the help of a faculty adviser.
Prerequisite: TESL 1F91(191) or permission of the chairperson.
Co-requisites: TESL 4F00, 4F01, 4F03, 4F04 or permission of chairperson. (Does not lead to Ministry of Education qualification to teach in the province of Ontario.)
Seminar, 3 hours per week.

***TESL 4F03

Audio lingual skills

(also offered as EDUC 4F03)
Theories and methods related to the teaching of English pronunciation and listening comprehension skills. To be considered are the role of contrastive analysis, error analysis and interlanguage, as well as techniques derived from generative phonology. The comprehension-based approach to second language teaching and the advantages and limits of the language lab will be discussed.
Prerequisite: TESL 1F91(191) or permission of the chairperson.
Co-requisites: TESL 4F00, 4F01, 4F02, 4F04 or permission of the chairperson. (Does not lead to Ministry of Education qualification to teach in the province of Ontario.)
Lectures, seminar, 3 hours per week.

***TESL 4F04

Curriculum design, methodology and practicum

(also offered as EDUC 4F04)
An extension of introductory work in TESL 1F91. Examination of the theoretical and historical factors influential in the development of second language curricula since 1960. A project in second language course design during the first term. Practical application of second language teaching methods and approaches. Micro-peer teaching sessions, observa-

tion and teaching practice in Brock's Intensive English Language program. Prerequisites: TESL 1F91(191), 3F93(393) or permission of the chairperson.

Co-requisites: TESL 4F00, 4F01, 4F02, 4F03 or permission of the chairperson. (Does not lead to Ministry of Education qualification to teach in the province of Ontario.)

Lectures, seminar, 3 hours per week.

***TESL/EDUC course for credit towards BEd only.

English as a Second Language

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.

Description of courses

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

Credit courses

APLS 1P90

Advanced written English

This course will help the student refine library research techniques, complete an academically acceptable term paper

with step-by-step help, and improve writing skills for academic and professional purposes. Grammatical structures will be examined and in-class writing assignments undertaken in order to meet the specific writing requirements of each group and to explore the various types of discourse. 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.

Not open to students with credit in EASL 143hc.

Lectures, 3 hours per week.

APLS 1P91

Advanced spoken English for ESL students

This course stresses the importance of seminar participation at Brock University. In order to help the student properly define and evaluate the practice of communication and intonation, a study of essential idioms and academic roleplays 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.

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

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.

Not open to students with credit in EASL 140hc.

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

Non-credit (remedial) courses

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

ESLX 0N10

Level I written English for ESL students

To meet the needs of students whose scores on standardized tests show a definitive need for remedial written work. Students use prescriptive grammar texts to practise the manipulation of syntactical structures, and are introduced to rudimentary research paper techniques. Emphasis is placed on creating and developing solid sentence/paragraph writing techniques. A short essay is required.

Lectures, 5 hours per week.

ESLX 0N11

Level I spoken English for ESL students

This course is designed to help the student to develop a corpus of two-word verbs in order to manipulate them in an academic context and understand 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, 5 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 who have previously acquired a basic knowledge of grammatical structures are encouraged in their attempts to expand writing skills at the sentence and paragraph levels. An outline of and emphasis on expository writing techniques to assist students in producing a short research paper.

Lectures, 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

Applied Language Studies

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, 4 hours per week, language lab, 1 hour per week.

Intensive English Language Program (IELP)

The IELP provides 25 hours of English instruction per week in: grammar and writing; guided reading; spoken English; language lab; and study skills/ orientation to Canadian culture. 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, Department of Applied Language Studies, Room C409, Brock University.

Asian Studies

Co-ordinator
J. R. A. Mayer

Co-operating faculty
R. Church, Politics
H. Imam, Economics
J.R.A. Mayer, Philosophy
J.P. Meeker, Geography
R.C. Nunn, Drama, Film Studies
and Fine Arts
J.L. Sanders, History
D. Sinha, Philosophy
P.D. Tyson, Psychology

General information

Schmon tower 1207

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 the equivalent of 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.

Course listing

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
GEOG 2P06	Cultural geography
HIST 2P92	China in crisis: from Opium War to People's Republic
HIST 2P93	Foundations of modern Japan
HIST 3P71	Modernization: Russia, China, 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 3P43	Politics in the Third World
POLI 4P43	Comparative politics of Southeast Asia
PSYC 2F97	Experiential psychology
PSYC 3F55	Perception and consciousness
SANS 1F00	Sanskrit

Description of courses

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. Not open to students with credit in ASIA 102. Lectures, seminars, 3 hours per week.

Biochemistry

Biological Sciences department

P. Nicholls, chairperson
W.H. Cade (after July 1, 1988)

Chemistry department

J.S. Hartman, chairperson
R.R. Hiatt (after July 1, 1988)

General information

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.

Pass program

Year 1

BIOL 1F90; CHEM 1F93 or 1F85;
MATH 1P93/1P94; PHYS 1F90 or
1F20; one humanities or social science
context credit (see Notes 1. and 2.).

Year 2

BIOL 2F01; one credit from BIOL
2P90, 2P91, 2P93, 2P98; CHEM 2P20/
2P21, 2P40 and one of CHEM 2P30
or 2P41; the humanities or social
science context credit not taken in year
1 (see Note 3.).

Year 3

BCHM 3P01, BIOL(BCHM) 3P49,
BIOL 3P50; one of BCHM 3P02,
3P04, BIOL 3P51, 3P91; CHEM 2F10;
CHEM 3P20/3P21; one elective
credit*.

*CHEM 3P40 is strongly recom-
mended; it is a prerequisite for CHEM

4F90/4F91 and should be taken in year
3 by students intending to proceed to a
year 4 thesis in chemistry.

Honors program

Years 1, 2 and 3

As in pass program.

Year 4

BIOL 4F90/4F91 or CHEM 4F90/
4F91; either BCHM 4P07 or one of
BCHM 3P02 or BCHM(BIOL) 3P04
(if not taken in year 3); one other year
4 BCHM half credit; one year 4 credit
in chemistry; 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
chemistry credit requirement.

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

Notes:

1. CHEM 1F93 required; CHEM 1F85
is permitted.
2. PHYS 1F90 with a lab is preferred;
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 2P30 in year 2.
4. 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.

Biological Sciences

Officers of instruction

Chairperson

P. Nicholls
W.H. Cade (after July 1, 1988)

Professors

A.W. Bown
W.H. Cade
M.D. Dickman
A.H. Houston
M.S. Manocha
R.D. Morris
P. Nicholls
R.P. Rand

Associate professors

R. L. Carlone
J.C. Lewis
D.J. Ursino

Assistant professors

B.J. Barclay
A. Castle

Research associate

S.S. Rao

NSERC University research fellow

D.H. Bruce

Laboratory instructors

J. Ciolfi
S. Haus
G. Melvin
G. Nicholls-Pawlowski

General information

Mackenzie Chown complex 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 fulfill the basic requirements for admission to professional and advanced degree studies, and to prepare the 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. The 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 addition to its own programs, the department of Biological Sciences participates in combined major programs with the departments of Chemistry, Geography, Geological Sciences, Mathematics, Physics and Psychology, and with the Institute of Urban and Environmental 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 College of

Education carrying credit toward the undergraduate degree.

Pass program

Students must complete at least seven biology credits of which four must be from the core program. The core program consists of BIOL 1F90, 2F01, 2F03, and one credit from 2P90, 2P91, 2P93, and 2P98. Also four ancillary science credits are to be completed, including CHEM 1F85 or 1F93, MATH 1P97/1P98, one of COSC 1P90/1P91, GEOL 1F95, PHYS 1F20, PHYS 1F90, and one further non-biology credit offered in the division of mathematics and sciences.

Recommended program:

Year 1

BIOL 1F90, CHEM 1F85 or 1F93, MATH 1P97/1P98. One of PHYS 1F20, PHYS 1F90, GEOL 1F95, or COSC 1P90/1P91. One humanities or social science context credit.

Notes:

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 should note that one credit in physics is required for certain professional programs.
3. Physics 1F20 is strongly recommended for students who do not have grade 13 physics.

Year 2

BIOL 2F01, 2F03; two of BIOL 2P90, 2P91, 2P93 and 2P98. One other year 1 or year 2 level science credit (a year 2 level organic chemistry course is recommended); the humanities or social science context credit not taken in year 1. The unspecified credit in science excludes ASTR 1F00, SCIE 1F20 and the year 1 mathematics courses.

Biological Sciences

Year 3

Three credits in biological sciences 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.

Note:

Students should note that many courses at year 3 or year 4 level are given in alternate years only, cycled with another similar course. These are: BCHM 3P02 and BCHM 3P04
BCHM 4P01 and BCHM 4P02
BIOL 3P60 and BIOL 3P65
BIOL 3P63 and BIOL 3P66
BIOL 3P91 and BIOL 3P92

The following courses are given in alternate years only: BCHM 4P04, BCHM 4P05, BCHM 4P07, BIOL 4P60, BIOL 4P62.

Students should plan their programs accordingly and are advised to refer to the applicable term timetable for details.

Honors program

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.

Years 1, 2 and 3
As in pass program.

Year 4
Four biology 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.

Combined major programs

The department of Biological Sciences offers combined major programs with the departments of Chemistry, Geography, Geological Sciences, 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

Pass program

Year 1
BIOL 1F90; CHEM 1F85 or 1F93; MATH 1P93/1P94; PHYS 1F90; one humanities or social science context credit.

Year 2
BIOL 2F01; one credit in biology from 2F03, 2P90, 2P91, 2P93, 2P98; CHEM 2P20/2P21; either CHEM 2F10 or CHEM 2P40 and one of CHEM 2P41 or 2P30; the humanities or social science context credit not taken in year 1.

Year 3
BCHM 3P01; BCHM 3P02 or BIOL(BCHM) 3P04 or 3P49 (two of these recommended when available); one year 3 credit in biological sciences (BIOL 3P50 recommended); the remaining one of CHEM 2F10 or CHEM 2P40 and one of CHEM 2P41 or 2P30 if not taken in year 2; one of CHEM 3P20/3P21, 3P30/3P31, or 3P51/3P53; one elective credit.

Note: CHEM 3P40 is strongly recommended; it is a prerequisite for CHEM 4F90/4F91 and should be taken in year 3 by students intending to proceed to a year 4 thesis in chemistry.

Honors program

Years 1, 2, and 3
As in pass program.

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 chemistry; one elective credit. CHEM 4P27 is recommended.

Biology and Geography

Pass 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 2F03; one credit from BIOL 2P90, 2P91, 2P93, 2P98; GEOG 2P07/2P08 (or equivalent); one credit from GEOG 2P04, 2P05, 2P09; one elective credit.

Year 3
Two credits in biology; GEOG 3P56; one and one half credits in geography from Group B (see Geography section of the calendar); one elective credit.

Honors program

Years 1, 2 and 3
As in pass program.

Year 4

Two credits in biology; GEOG 4F99; one year 4 credit in geography from Group B (see Geography section of the calendar); one elective credit. One of: BIOL 4F90/4F91, or BIOL 4F92 or GEOG 4F90 must be included.

Biology and Mathematics

Pass program

Year 1

BIOL 1F90; MATH 1P90, 1P93, 1P94, 1P98; CHEM 1F85 or 1F93; one humanities or social science context credit.

Year 2

Two credits from BIOL 2F01, 2F03, 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 biology, one of which must be at the year 3 level; MATH 2F96, 2P20, 3P20; one elective credit.

Honors program

Years 1, 2 and 3

As in pass program.

Year 4

Two year 3 or year 4 credits in biology; two year 3 or year 4 credits in mathematics (either 3P58/4P58 or 3P59/4P59 and 4P19/4P20 recommended); one elective credit.

Biology and Psychology

Pass program

Year 1

BIOL 1F90; PSYC 1F90; CHEM 1F85 or 1F93; one humanities; one elective credit (MATH 1P97/1P98 or MATH 1F92 recommended).

Year 2

Two credits from BIOL 2F01, 2F03, 2P90, 2P91, 2P93, 2P98; PSYC 2F23, one other psychology credit numbered 2(alpha)00 or higher; one elective credit.

Year 3

Two year 2 or year 3 credits in biology; two credits in psychology numbered 2(alpha)90 or higher (for students proceeding to the honors program, PSYC 3F40 is required); one elective credit.

Honors program

Years 1, 2 and 3

As in pass program.

Year 4

Two credits in biology which may include BIOL 4F90/4F91 or BIOL 4F92; PSYC 4P92/4P93 and one other year 4 psychology credit (if neither BIOL 4F90/4F91 nor BIOL 4F92 is taken, PSYC 4F91 is required); one elective credit.

For combinations with geological sciences, physics, and urban and environmental studies, see the entry under the other department.

Master of Science (MSc) program

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, which will include BIOL 5F90 (MSc thesis) and the equivalent of two full courses, 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 chairperson.

Graduate courses

BCHM 5P01

Advanced plant biochemistry--metabolism

BCHM 5P02

Advanced plant biochemistry--transport

BCHM 5P04

Advanced bioenergetics

BIOL 5F40

Selected topics in biophysics (inter-university program)

BIOL 5F90

MSc thesis

BIOL 5P05

Advanced Topobiochemistry

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 5P41

Selected topics in biophysics (inter-university program)

BIOL 5P52

Advanced developmental genetics

BIOL 5P53

Immunology

BIOL 5P54

Advanced molecular biology of yeast

BIOL 5P55

Membrane structure and function

BIOL 5P56

Behavioral genetics

BIOL 5P57

Advanced recombinant DNA techniques

BIOL 5P60

Advanced seminar in population and behavioral ecology

Biological Sciences

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

For details, refer to the graduate calendar or contact the chairperson of the department.

Description of courses

Abbreviations:

BCHM	Biochemistry
BIOL	Biology

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

BCHM 3P01
Metabolic biochemistry
pH and buffers, biochemical energetics, carbon metabolism of carbohydrates, lipids and proteins; nitrogen metabolism.

Prerequisite: BIOL 2F01(201) or CHEM 2P20 (2P90(290hc)) or equivalent year 2 chemistry.
Lectures, seminar, 3 hours per week; labs to be announced.

BCHM 3P02
Enzyme biochemistry
Enzymes as protein catalysts; enzyme mechanisms and kinetics; the active site; allostery and control of enzyme activity; membrane-bound enzymes,

including ion pumps, ATPases and oxidoreductases; multienzyme systems. Prerequisite: BIOL 2F01(201), (BCHM 3P01(301hc) recommended) or permission of the instructor.
Lectures, seminar, 2 hours per week; lab/simulations, 3 hours per week, alternate weeks.

BCHM 3P04
Introduction to biophysics and physical biochemistry
(also offered as BIOL 3P04)
Topics in the course will include photobiology, membranes, and neurobiophysics. Emphasis will be given to ideas lying at the interfaces between the disciplines of biology, chemistry and physics. Laboratories will focus upon the techniques used to study molecular events in complex biological systems including membranes, organelles and cells. Prerequisite: Biol 2F01(201), (BCHM 3P01(301hc) recommended) or permission of the instructor.
Lectures 3 hours per week; labs, 3 hours per week, alternate weeks.

BCHM 3P49
Molecular biology
(also offered as BIOL 3P49)
Primary, secondary and tertiary structure of nucleic acids and proteins; their physical biochemistry; protein interactions with DNA; mutagenesis and recombination; the genetic code and information flow from nucleic acids to proteins, RNA and protein synthesis; plasmids and cloning. Prerequisite: BIOL 2F01(201) or permission of the instructor.
Not open to students with credit in BIOL 327hc.
Lectures, seminar, 3 hours per week; lab, 3 hours per week, alternate weeks.

BCHM 3V90-3V99
Special topics in biochemistry
A lecture/seminar course in which a student may explore areas not represented by existing courses. The subject area of this course may not overlap with that of BIOL 4F90/4F91, BIOL 4F92, or any year 3, year 4, or graduate course in biology/biochemistry. 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 in a major essay and as a formal seminar. Permission of supervising instructor and chairperson of the department is required for enrolment in this course.

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. Prerequisite: BCHM 3P01(301hc) or BCHM 3P02(302hc) or permission of the instructor.
Lectures, seminar, 2 hours per week.

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. Prerequisite: BCHM 3P01(301hc) or 3P02(302hc) or permission of the instructor.
Lectures or seminar, 2 hours per week.

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; Elsdén's and Kleiber's laws. Prerequisite: BCHM 3P01(301hc) or 3P02(302hc) or 3P04 or permission of the instructor.
Lectures, seminar, 2 hours per week.

BCHM 4P05
Topobiochemistry
Spatial and topological problems encountered by enzymes and associated systems interacting with membranes and linear macromolecules; kinetics, energetics and mechanisms of DNA-

and RNA-manipulating enzymes and of cell-membrane associated enzymes, with comparisons between one-dimensional and two-dimensional cases.

Prerequisite: any two of BCHM 3P01, 3P04 and 3P49, or permission of the instructor.

Lectures, seminar, 2 hours per week.

**BCHM 4P07
Advanced seminar in
biochemistry**

A seminar course involving student presentation of selected research papers in biochemistry.

Prerequisite: BCHM 3P01(301hc) or 3P02(302hc) or 3P04 or permission of the instructor.

Seminar, 2 hours per week.

**BIOL 1F25
Biology, man and environment**

A course directed towards non-science students dealing with those aspects of biology which relate directly to man and which represent contemporary issues of human concern. Topics will be selected from areas such as human anatomy and physiology, nutrition, diseases, drugs, sexuality, heredity, evolution, ecology and environmental stresses. High school biology is not a prerequisite for this course.

Lectures, 2 hours per week; seminars, labs, alternating weeks, 2 hours per week.

**BIOL 1F90
Contemporary issues in biology**

This course, designed primarily for students contemplating majors in science, will present such fundamental biological concepts as organization, growth and development, energy flow and utilization, regulation, and the storage and transmission of genetic information. These concepts will be presented by the use of case studies such as the biology of cancer and diabetes, the responses of biological systems to ionizing radiation, fisheries management, the pesticide dilemma, the spruce budworm, human population ecology and food resources, and aspects of genetic engineering. The

laboratory component stresses the process of investigation.

Prerequisite: grade 13 or OACs in biology and chemistry are strongly recommended.

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

Note:

Students registering for BIOL 1F90 should normally register for MATH 1P98 *Basic statistical methods* 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.

Prerequisite: BIOL 1F90(190).

Lectures, 2 hours per week; seminar, 1 hour per week; lab, 3 hours per week (weeks 7-13 in term 1 and weeks 1-6 in term 2).

**BIOL 2F03
Principles of environmental biology**

Biological processes at the population and community levels of biological organization; patterns and diversity in natural systems in the context of species-specific adaptations and evolution; population group characteristics; single-species and mixed-species interactions; the growth and regulation of numbers; community structural organization; species diversity; and energy flow through ecosystems.

Prerequisite: BIOL 1F90(190).

Lectures, 2 hours per week; lab, 3 hours per week (weeks 1-6 in term 1 and weeks 7-13 in term 2).

**BIOL 2F95
Bioethics, an inquiry into selected
issues**

(also offered as PHIL 2F95)
An interdisciplinary course focusing on important issues from the areas of biology and medicine which give rise

to moral dilemmas and value conflicts. Topics to be considered depend in part on student interest, but may include reproductive interventions, transplantation and the allocation of scarce medical resources, the control of human behavior, consent for treatment, lifestyle choices, and death and dying. No previous background in biology or philosophy is necessary. This course cannot count as a major course in biology or in biology combined major programs. It may serve as an elective for biology majors.

Prerequisite: permission of the instructor.

Lectures, seminar, 3 hours per week.

**BIOL 2P90
Invertebrate zoology**

The diversity, structure, function, behavior, and evolutionary relationships of the invertebrate phyla.

Prerequisite: BIOL 1F90(190) or permission of the instructor.

Not open to students with credit in BIOL 292.

Lectures, 3 hours per week; lab, 3 hours per week.

**BIOL 2P91
Comparative vertebrate zoology**

An evolutionary examination of the vertebrate taxa with emphasis on the structure, development, and function of organ systems.

Prerequisites: BIOL 1F90(190) or permission of the instructor.

Not open to students with credit in BIOL 292.

Lectures, 3 hours per week; lab, 3 hours per week.

**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.

Prerequisite: BIOL 1F90(190) or permission of the instructor.

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

Biological Sciences

BIOL 2P98

Principles of microbiology

Lecture and laboratory course dealing with the principles of microbiology. Structure and biology of various kinds of microorganisms will be studied. Prerequisite: BIOL 1F90(190) Not open to students with credit in BIOL 340hc. Lectures, 2 hours per week; lab, 3 hours alternate weeks.

BIOL 3P04

Introduction to biophysics and physical biochemistry

(also offered as BCHM 3P04)

Topics in the course will include photobiology, membranes, and neurobiophysics. Emphasis will be given to ideas lying at the interfaces between the disciplines of biology, chemistry and physics. Laboratories will focus upon the techniques used to study molecular events in complex biological systems including membranes, organelles and cells. Prerequisite: Biol 2F01(201), (BCHM 3P01(301hc) recommended), or permission of the instructor. Lectures 3 hours per week; labs, 3 hours per week, alternate weeks.

BIOL 3P22

An introduction to tissue structure
Microscopic anatomy and functional organization of epithelia, connective tissue, blood, nervous tissue and muscle.

Prerequisite: BIOL 2F01(201) or permission of the instructor. Not open to students with credit in BIOL 324. Lectures, 3 hours per week; lab, 3 hours per week.

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. Prerequisite: BIOL 2P91(291hc); (BIOL 3P22(322hc) strongly recommended); or permission of the instructor. Not open to students with credit in

BIOL 324.

Lectures, 3 hours per week; lab, 3 hours per week.

BIOL 3P28

Experimental embryology

Cell lineage studies in early embryonic development. Origin of cell heterogeneity. Cell-cell interactions and tissue organization. Morphogenesis and regeneration.

Prerequisite: BIOL 2F01(201). Lectures, 3 hours per week; lab, 3 hours alternate weeks.

BIOL 3P34

Neurobiology

A study of 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.

Prerequisite: two credits from BIOL 2F01 (201), 2F03(203), 2P90(290hc), 2P91(291hc), 2P93(293hc).

Not open to students with credit in BIOL 320. Lectures, 3 hours per week; lab, 3 hours per week.

BIOL 3P35

Comparative animal physiology

An introduction to organ system functions and their control and adaptation with particular reference to cardiovascular, respiratory and osmo- and ionoregulatory activities.

Prerequisite: BIOL 2F01(201) and either BIOL 2P90(290hc) or 2P91(291hc).

Not open to students with credit in BIOL 321. Lectures, 3 hours per week; lab, 3 hours per week.

BIOL 3P42

Microbial physiology

A study of microbial growth and metabolism as influenced by nutritional and environmental factors.

Prerequisite: BIOL 2P98(298hc). Lectures, seminar, 3 hours per week.

BIOL 3P44

Industrial and agricultural microbiology

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.

Prerequisite: BIOL 2P98 or permission of the instructor. Lectures, 3 hours per week, labs, 3 hours alternate weeks.

BIOL 3P49

Molecular biology

(also offered as BCHM 3P49)

Primary, secondary and tertiary structure of nucleic acids and proteins; their physical biochemistry; protein interactions with DNA; mutagenesis and recombination; the genetic code and information flow from nucleic acids to proteins, RNA and protein synthesis; plasmids and cloning. Prerequisite: BIOL 2F01(201) or permission of the instructor.

Not open to students with credit in BIOL 327hc. Lectures, seminar, 3 hours per week; lab, 3 hours per week, alternate weeks.

BIOL 3P50

Molecular genetics

The prokaryotic and eukaryotic chromosome, DNA replication and its control; transcription and its control; gene organization and expression; RNA processing; movable genes and transposons; viruses, oncogenes and malignant transformation.

Prerequisite: BIOL 2F01(201); (BIOL(BCHM) 3P49(349hc) strongly recommended); or permission of the instructor. Lectures, 3 hours per week; lab 3 hours per week, alternate weeks.

BIOL 3P51

Genetics: transmission, development, population

Concepts of classical genetics including genetic mapping, extra-nuclear inheritance, polyploidy, genetics and development, evolutionary genetics.

Prerequisite: BIOL 1F90(190).
Lectures, 3 hours per week; lab, 3 hours per week.

BIOL 3P60

Animal behavior

A consideration of the 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. Prerequisite: BIOL 2F03(203) and 2F92(292), one of 2P90(290hc) or 2P91(291hc).

May be taken concurrently, with the permission of the instructor.
Lectures, seminar, 3 hours per week; lab as required.

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.

BIOL 3P64

Introductory insect biology

An introduction to the study of insects. 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.

Prerequisite: BIOL 1F90(190) or permission of instructor.

Not open to students with credit in BIOL 296hc.

Lectures, 2 hours per week; lab, 3 hours per week.

BIOL 3P65

Investigative studies in animal ecology

A laboratory course stressing the scientific investigation of ecological studies; detailed consideration is given to experimental planning, data interpretation and investigative techniques.

Prerequisite: BIOL 2F03(203) and 2P90(290hc), 2P91(291hc) or permission of the instructor.

Lectures, lab, 6 hours per week.

BIOL 3P66

Aquatic plant ecology

Field and laboratory recognition of algae as well as higher aquatic plants; and 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.

Prerequisites: BIOL 2F03(203).

May be taken concurrently with the permission of the instructor.

Lectures, 3 hours per week; lab, 3 hours per week.

BIOL 3P69

Ornithology

Basic biology, systematics and distribution of birds; their origin and evolution; adaptive radiation, basic zoogeography, reproductive strategies, and general behavior including vocalizations and territoriality. Laboratories stress morphology, identification and classification of representatives of avian orders. Field exercises will take place at appropriate times.

Prerequisite: BIOL 2F03(203) and 2P91(291hc), or permission of the instructor.

Lectures 2 hours per week; lab/field trips.

BIOL 3P71

Ontario universities field biology course

In co-operation with Carleton, Toronto, Queen's, Waterloo, Western and York universities, the department of biological sciences participates in a series of one and two week field 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 periods from late April through early September. Two one-week units or one two-week unit will constitute the equivalent of one half course. Registrants normally defray their own travel expenses to the field station. Modest board and room costs are required in addition to the usual half-course registration fee.

Prerequisite: BIOL 2F03 (203).
Registration must be completed by January 25 with R. D. Morris.

BIOL 3P72

Ontario universities field ecology course

See BIOL 3P71 for course description.

May not be taken until BIOL 3P71(371hc) has been completed.
Prerequisite: BIOL 2F03(203).

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; biogeography; adaptation, natural selection and the origin of species; molecular evolution; evolution of specific taxonomic groups including human beings.

Prerequisite: completion of required courses in year 2 in single or combined major programs in biology or equivalent, or permission of the instructor.
Lectures 1 1/2 hours per week; seminar, 1 1/2 hours per week.

Biological Sciences

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.

Prerequisite: the equivalent of two full year 2 level biology courses or permission of the instructor.

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.

Prerequisite: BIOL 2P93(293hc) or permission of the instructor.

Lectures, 3 hours per week; lab/seminar, 2 hours per week.

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.

Prerequisite: BIOL 2P93(293hc) or permission of the instructor.

Lectures, 2 hours per week; labs, 3 hours per week.

BIOL 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, BIOL 4F92, or any year 3, year 4, or graduate course in biology. 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.

Prerequisite: permission of supervising instructor and chairperson 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(371hc) or 3P72(372hc). Submission and oral defence of a thesis is required.

Prerequisite: admission to the year 4 honors program.

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.

Prerequisite: admission to the year 4 honors program.

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.

Prerequisite: admission to the year 4 honors program.

BIOL 4F93

BSc honors research

To be taken in conjunction with BIOL 4F94. Each student will undertake a

research project involving field or laboratory study under faculty supervision. Submission of a written report and the presentation of a seminar is required.

Prerequisite: admission to the accelerated MSc program.

Co-requisite: BIOL 4F94.

May not be taken concurrently with BIOL 4F90 or 4F91.

BIOL 4F94

Literature research

To be taken in conjunction with BIOL 4F93. Each student will undertake a detailed study of the scientific literature relevant to the topic of the honors research. The review will form an integral part of the seminar presentation associated with BIOL 4F93.

Prerequisite: admission to the accelerated MSc program.

Co-requisite: BIOL 4F93.

May not be taken concurrently with BIOL 4F90 or 4F91.

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 physiology of host-parasite interaction.

Prerequisite: BIOL 2P98(298hc) or permission of the instructor.

Lectures, seminar, 2 hours per week.

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.

Prerequisite: BIOL 3P28(328hc) and 3P34(334hc) or permission of the instructor.

Seminar, 2 hours per week.

BIOL 4P30

Thermal biology

Temperature, the single most pervasive component of the physicochemical environment, will be considered in terms of lethal, controlling, directive and related effects upon aquatic and terrestrial animals. Consideration will be given to adaptive responses as these are expressed at the biochemical, physiological and organismic levels, and to the impact of waste heat discharges.

Prerequisite: BIOL 3P35(335hc) or permission of the instructor.
Lectures, seminar, 3 hours per week.
Field trips as appropriate.

BIOL 4P35

Physiology of exercise

Skeletal muscle function and metabolism during exercise; functional responses of the cardiovascular, respiratory, nervous and endocrine systems to exercise. Special attention will be given to regulatory mechanisms and analysis of the more important factors that can limit athletic performance.

Prerequisite: BIOL 2F01(201).
Lectures, 2 hours per week; seminar, 2 hours per week.

BIOL 4P50

Advanced seminar in physiology and biophysics

Selected topics in neuro-, sensory, and organ physiology.
Prerequisite: BIOL 3F20(320) or 3F21(321), or 3P34(334hc), or 3P35(335hc).

Lectures, seminar, 2 hours per week.

BIOL 4P52

Developmental genetics

A seminar course on the role of specific structural and regulatory genes in development; homeotic genes in *drosophila*; developmental lethals in mammals; maternal effect genes; temporal genes.

Prerequisite: BIOL 3P28(328hc) or 3P50(350hc) or 3P51(351hc).
Seminars, 2 hours per week.

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.

Prerequisite: BCHM 3P01(301hc) or BIOL 3P50 (350hc).
Lectures, seminar, 2 hours per week.

BIOL 4P54

Molecular biology of yeast

A study of the molecular genetics of simple eukaryotes using yeast as a model system. Analysis of a wide range of genetic studies which reveal the general utility of yeast as an experimental organism.

Prerequisite: BIOL 3P50(350hc) or permission of the instructor.
Lectures, seminar, 2 hours per week.

BIOL 4P55

Fungal genetics

An examination of 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.

Prerequisite: BIOL 3P50 or BIOL 3P51 or permission of the instructor.
Lectures, seminar, 2 hours per week.

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.

Prerequisite: BIOL 3P51(351hc) or permission of the instructor.
Lectures, seminar, 2 hours per week.

BIOL 4P60

Advanced seminar in population and behavioral ecology

Advanced seminar in population and behavioral ecology. The topics selected vary from year to year partly in response to student interests.

Prerequisites: one of BIOL 3P60(360hc), 3P61(361hc),

3P64(364hc), 3P65(365hc).

Lectures, seminar, 2 hours per week.

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.

Prerequisite: BIOL 3P63(363hc) or permission of the instructor.
Lectures, seminar, 3 hours per week.

BIOL 4P62

Concepts of limnology

Productivity of aquatic ecosystems, species diversity, indicator species assemblages, lake classification and current concepts of limnology.

Prerequisite: BIOL 3P63(363hc) or permission of the instructor.
Lectures, seminar, 2 hours per week; lab, 3 hours per week.

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 coevolution, chemical, visual, and acoustical communication, defensive behavior, reproductive behavior and the eusocial insects.

Prerequisite: BIOL 3P64(364hc) or 3P60(360hc) or permission of the instructor.

Lectures, seminar, 2 hours per week.

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.

Prerequisite: BIOL 2P90(290hc), 2P91(291hc) or permission of the instructor.

Lectures, 2 hours per week; seminar/lab 2 hours per week.

Business Economics

School of Administrative Studies
J.R. Hanrahan, dean

Economics department
R.E. Robb, chairperson

General information

The Bachelor of Business Economics (BBE) is a pass (three year) degree program offered jointly by the department of Economics and School of Administrative Studies. It is designed for students who wish to combine the study of business and economics. Graduates of this program are expected to pursue careers in either the public or private sector.

While an honors degree program is not available for the BBE degree, it is possible to transfer into an honors program in economics and/or administrative studies. For transfer into the combined honors program in economics and administration, the student should consult the School of Administrative studies and the department of Economics.

Pass program

Year 1

ACTG 2P53/2P54; ECON 1P91/1P92; MGMT 1P91, MATH 1P98; one humanities and one science context credit.

Year 2

ECON 2P21/2P22, 2P31/2P32, 2P90; FNCE 3P92/3P93; MGMT 1P94, 3P41; MKTG 3P22.

Year 3

One and one half year 3 economics credits; MGMT 3P30, 3P81; one ACTG/FNCE/ MGMT/ MKTG credit;

one half ACTG/FNCE/MGMT/MKTG or economics credit; one elective credit.

Honors program

For students wishing to pursue an honors Bachelor of Administration: consult the School of Administrative Studies before selecting elective courses.

For students wishing to pursue an honors degree in economics:

(a) Students in the BBE program as outlined in the 1987/88 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 an elective half credit in the BBE program.

Year 4

ECON 3P90, 3P91, 4F90, 4P13, 4P14; two year 3 economics 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 fulfill 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 economics credits.

Canadian Studies

Director

M.J. Rose
Department of English Language and
Literature

The Canadian studies program at Brock combines the advantages of a traditional major with the benefits of concentration upon Canadian-related courses.

Student may earn the Canadian studies designation by completing the program for a single or combined major in one or more of the participating departments, having included in that program a number of Canadian-related courses.

Specifically, at least five of their credits for a pass degree, and eight for an honors degree, must be in Canadian related courses chosen from the list of approved *Courses from which Canadian studies credits may be selected*. For a pass degree, students must include CANA 2F91 among the five credits chosen from that list; for an honors degree, students must take both CANA 2F91 and CANA 3F91 among the eight credits chosen from that list.

Students should note that normal university requirements for the program in which they are majoring, including core and context, must be met. Also, students seeking the Canadian studies designation must have at least one credit in French or related to French Canada, to be taken from those courses listed below which are marked with an asterisk. Reading proficiency in French upon graduation is highly recommended for Canadian studies students.

Finally, in addition to CANA 2F91, CANA 3F91 and the French or French Canada requirements, students are required to complete at least one full course from the list of approved Canadian-related courses which is outside their major discipline(s) or field of study.

The transcripts of students who fulfill these Canadian studies requirements

will stipulate Canadian studies as well as their majors.

It is recommended that Canadian studies students confer with the director of Canadian studies, preferably at the beginning of the second year of studies, to discuss their programs and ensure that all requirements will be met.

Pattern of study

Students must fulfill all the requirements of their major or combined major course of study.

CANA 2F91 is required of all students seeking the Canadian studies designation. Honors students seeking the designation must also take CANA 3F91.

CANA 1F91 is not required for the Canadian studies designation, but is a humanities context course and is recommended for students planning to earn the Canadian studies designation.

All Canadian studies students must complete one course in French or related to French Canada, as specified above.

Canadian Studies students must take at least one credit, from the approved list of Canadian-related courses which is drawn from a discipline or field of study which is outside their major or combined major field of study.

Description of courses

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
An introduction to the history and development of Canadian culture from Confederation to the present. The course is interdisciplinary, and examines cultural expressions (drawn from

Canadian literature and painting) as well as selected social and critical documents related to the development of the arts in Canada.

Not open to students with credit in CANA 290.

Lectures, seminar, 3 hours per week.

CANA 2F91

Canadian culture and society: interdisciplinary studies

Faculty from various departments will be participating in this course. Topic for 1988/89: **Regionalism**

Prerequisite: CANA 1F91(191), or permission of the instructor.

Not open to students with credit in CANA 250.

Lectures, seminar, 3 hours per week.

CANA 3F91

Special studies on Canadian issues
A seminar course involving interdisciplinary work on selected Canadian issues. Topic to be announced with each offering.

Topic for 1988/89: **The immigrant experience in Canada**

Prerequisite: CANA 2F91 or permission of the instructor.

Seminar, 3 hours per week.

Courses from which Canadian studies credits may be selected:

BIOL 3P63	Field limnology
CANA 1F91	Introduction to Canadian studies
CANA 2F91	Canadian culture and society: interdisciplinary studies
CANA 3F91	Special studies on Canadian issues
COMM 2F24	Canadian popular culture (also offered as FILM 2F24)
COMM 2P23	Mass media (also offered as SOCI 2P23)
COMM 3P17	Politics and the mass media in Canada (also

Canadian Studies

	offered as POLI 3P17)	HIST 3P74	Canada, a land of immigrants		policy, law and administration
COMM 3F24	Canadian cinema (also offered as FILM 3F24)	HIST 3P76	Canada's evolving social fabric	POLI 4P11	Issues in local government and politics
DRAM 2F97	Canadian drama	HIST 3P82	Canadian - American Relations	POLI 4P14	Federalism in Canada
DRAM 2P91	Canadian radio and television drama	*HIST 3P98 HIST 4P12	French Canada Post-Confederation Canada	POLI 4P15	Canadian political economy
ECON 2F95	Canadian economic policy	MGMT 2P40	Commercial Law	POLI 4P50	Machinery of government
ECON 2P09	Canadian economic history	MGMT 3F51	Canadian public administration (also offered as POLI 3F51)	POLI 4P52	Personnel and financial administration in the public sector (also offered as MGMT 4P52)
ECON 3P15	Public finance: taxation		Introduction to public administration (also offered as POLI 3P50)	POLI 4P54	Business-government relations (also offered as MGMT 4P54)
ECON 3P18	Urban economics	MGMT 3P50	Administrative law		Public policy formulation in Canada
ECON 3P19	Regional economics		Personnel and financial administration in the public sector (also offered as POLI 4P52)	POLI 4V10-4V19	Issues in Canadian politics
EDUC 1F90	Introduction to education studies	MGMT 4P40	Business-government relations (also offered as POLI 4P54)	SOCI 2P23	Mass media (also offered as COMM 2P23)
ENGL 2F91	Canadian literature in English	MGMT 4P52	Industrial and labor relations	SOCI 2P51 SOCI 2P71	Gender and society
FILM 2F24	Canadian popular culture (also offered as COMM 2F24)	MGMT 4P54	The government and politics of Canada	SOCI 2P72 SOCI 3P42 SOCI 3P46	Class, status and power
FILM 3F24	Canadian cinema (also offered as COMM 3F24)		Urban politics and administration	SOCI 3P47 SOCI 4P42	Social inequality
*FREN 1F00	Language (introductory)	MGMT 4P63	Politics in Ontario		Canadian society
*FREN 1F80	Practical language	POLI 2F12	Politics in Quebec	UEST 2F96	Native peoples and Canadian society
*FREN 1F90	Language and literature	POLI 3P11	Politics and the mass media in Canada (also offered as COMM 3P17)	UEST 3P53	Ethnic groups
*FREN 2F05	Introduction to French Canadian literature (in French)	POLI 3P15 *POLI 3P16 POLI 3P17	Law and politics	UEST 3P55	Special topics in Canadian society
*FREN 2F95	French-Canadian novel and short story (in French)		The Canadian judicial process		Principles of planned urban change
*FREN 3F95	French-Canadian theatre (in French)	POLI 3P18 POLI 3P19	Canadian foreign policy		Environmental impact assessment
*FREN 4F85	French-Canadian poetry (in French)	POLI 3P28	Canadian - American relations		Management of fisheries and wild-life resources
GEOG 2P91	Geography of Canada	POLI 3P29	Canadian public administration (also offered as MGMT 3F51)	UEST 3P57	Social services planning in the urban region
GEOG 3P22	Principles of geomorphology	POLI 3F51	Introduction to public administration (also offered as MGMT 3P50)	UEST 3V60-3V65	Selected issues in urban policy
GEOG 3P43	The evolution of urban space: the Canadian city		Introduction to public policy	VISA 2F50	Canadian art
GEOG 4F62	Advanced population geography and demography	POLI 3P50	Environmental		
GEOG 4F62	Geology of Canada				
GEOL 4P02	Canada to 1864				
HIST 2F74	Canada since 1867	POLI 3P65			
HIST 2F94	- discovering the "Canadian" way	POLI 3P66			

In addition, Canadian Studies credit may also be given for thesis courses arranged in participating departments and approved by the director of the program.

Note: as many of the courses listed above have prerequisites, students should plan their programs in advance.

Canadian and European Community Studies

Director

C. Abrahams, Dean,
Division of Humanities

General information

Schmon tower 401D

The Brock program in Canadian and European community studies explores the importance of reciprocal relations between Canada and the European community. The program is professionally oriented; it aims to help prepare its graduates for careers in transatlantic relations, especially those between Canada and Europe, in order to promote Canadian interests in Western Europe, one of the world's major trading entities. To this end, a system of courses has been coordinated including administrative studies, economics, geography, history, politics, sociology, urban and environmental studies, and the French and German languages.

The program is offered only as a four year honors program leading to the degree of bachelor of arts (BA) 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.

Honors program

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 French and German at the 1F90 level or above must be taken in years 1 and 2. At least two credits in either French or German, numbered 2(*alpha*) 90 or above, must be taken during years 3 and 4.

Students must fulfill the University's core and 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 the department of History or Politics, including a year 4 honors research credit.

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 Quebec and France.

Prerequisites:

Either grade 13 French (or FREN 1F00(100), or equivalent), or grade 13 German (or GERM 1F00(100), or equivalent). FREN 1F00, or GERM 1F00, or both, may be taken in year 1.

Course listings

A complete list of approved Canadian and European community studies courses follows below. For more information and direction, consult the departments.

CANA 1F91

Introduction to Canadian Studies

CANA 2F91

Canadian culture and society: interdisciplinary studies

ECON 1P91

Principles of microeconomics

ECON 1P92

Principles of macroeconomics

ECON 2F95

Canadian economic policy

ECON 2P21

Intermediate

ECON 2P22

microeconomics I

ECON 2P31

Intermediate macroeconomics I

ECON 2P32

Intermediate microeconomics II

ECON 3F07

Intermediate macroeconomics II

ECON 3P11

Comparative economic systems

ECON 3P12

International trade

ECON 3P14

International payments

ECON 3P15

Public finance;

expenditure

Public finance:

taxation

ECON 3P18

Urban economics

ECON 3P19

Regional economics

FREN 1F00

Language

(introductory)

FREN 1F80

Practical language

FREN 1F90

Language and

Literature

FREN 2F00

Language

(intermediate)

FREN 2F95

French-Canadian

novel and short

story

FREN 3F95

French-Canadian

theatre

FREN 4F85

French-Canadian

poetry

GEOG 1F90

Introduction to

human geography

GEOG 2P02

Principles of

economic

geography

GEOG 2P06

Cultural geography

GEOG 2P90

Geography of

Western Europe

GEOG 2P91

Geography of

Canada

GEOG 3P42

The evolution of

urban space: the

European city

GEOG 3P43

The evolution of

urban space: the

Canadian city

GEOG 3P84

Political geography

GERM 1F00

Language

(introductory)

GERM 1F90

Language and

literature

Canadian and European Studies

GERM 1F96	(intermediate I) Culture and civilization of Central Europe II	HIST 4P45	and politics European thought and culture	UEST 3P55	Management of fisheries and wildlife resources
GERM 1P93	Culture and civilization of Central Europe: from the prehistoric to the Carolingian period	MGMT 1P91 MGMT 2P40	Introduction to business Commercial law	UEST 3V20-3V25	Interdisciplinary perspectives on the quality of life
GERM 1P94	Culture and civilization of Central Europe: the Holy Roman Empire	POLI 1F90 POLI 2F12	Introduction to politics The government and politics of Canada	UEST 3V30-3V35	Interdisciplinary perspectives in urban and environmental studies
GERM 2F00	Language (intermediate II)	POLI 2F20 POLI 2P45	International politics The government and politics of the United Kingdom		
GERM 3F99	Advanced language study I	POLI 3F51	Canadian public administration		
GERM 3P98	Practicum in Germany	POLI 3P11	Urban politics and administration		
GERM 4F10	Advanced language study II	POLI 3P15 POLI 3P16 POLI 3P17	Politics in Ontario Politics in Quebec Politics and the mass media in Canada		
GERM 4P98	Practicum in Germany		Law and politics International law International organization		
HIST 1F95	A violent century: and introduction to world history since 1914	POLI 3P18 POLI 3P26 POLI 3P27	Canadian foreign policy		
HIST 2F74	Canada to 1864	POLI 3P28	Environmental policy, law, and administration		
HIST 2F94	Canada since 1867 discovering the "Canadian" way	POLI 3P66	Foreign policies of great powers		
HIST 2P51	Europe's greatest century: 1815-1914	POLI 4P22	Theories of international relations		
HIST 2P52	Europe from ruin to recovery: 1914-1972	POLI 4P27	Western European politics		
HIST 2P99	Ideas and culture, 1700-1850	POLI 4P45	Public policy formulation in Canada		
HIST 3F24	Britain in the twentieth century	POLI 4P65	Issues in Canadian Politics		
HIST 3F50	The Germans		Political sociology		
HIST 3F91	The experience of Empire		Socialization		
HIST 3P00	Ideas and culture, since 1850	POLI 4V10-4V19	Canada society		
HIST 3P74	Canada, a land of immigrants	SOCI 2P31	Native peoples and Canadian society		
HIST 3P92	Selected aspects of Upper Canada/ Ontario History, 1784-1914	SOCI 2P52 SOCI 3P42 SOCI 3P46	Ethnic groups		
HIST 3P98	French Canada	SOCI 3P47			
HIST 4P12	Post-Confederation Canada				
HIST 4P35	European society	UEST 1F90	Introduction to urban and environmental studies		

Chemistry

Officers of instruction

Chairperson

J.S. Hartman
R.R. Hiatt (after July 1, 1988)

Professors

E.A. Cherniak
M.S. Gibson
J.S. Hartman
R.R. Hiatt
H.L. Holland
J.M. Miller
D.C. Moule
M.F. Richardson
S.M. Rothstein

Assistant Professor

I. D. Brindle

Research professor (honorary)

M. Chiba

Adjunct associate professor

J. Vrbik

Senior demonstrator

G. Neff

General information

Mackenzie Chown complex 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 mechanics of small molecules, 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: Co-60-gamma irradiation facility; Bruker AC 200 NMR Cryospectrometer for solution and high resolution solid studies; Bruker WP60 multinuclear FT NMR and Bruker WP-80 CW NMR spectrometers; two AEI MS-30 mass spectrometers with KRATOS DS-55 Data system, EI and FAB sources; HP capillary GC/MS; 6m. Ebert grating spectrograph; Cary and Varian spectrophotometers; 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.

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.)

Breakage Charges

Students in laboratory courses will be charged for excessive breakage.

Pass program

The pass program in chemistry must include: CHEM 1F93 or 1F85 (see Note 1.); PHYS 1F90 or 1F20 (see Note 2.); CHEM 2F10, 2P20/2P21, 2P30, 2P40/2P41, 3P40; two of CHEM 3P20/3P21, 3P30/3P31, 3P51/3P53; PHYS 2P20, 2P31; MATH 1P93/1P94; and two other credits, normally in the sciences, mathematics or computer science (see Note 3.).

A typical pass program:

Year 1

CHEM 1F93 or 1F85; PHYS 1F90 (preferred) or 1F20; MATH 1P93/1P94; two context credits. (See Notes 1., 2. and 3.)

Year 2

CHEM 2F10, 2P20/2P21, 2P30, 2P40/2P41; PHYS 2P20; one elective credit. (See Notes 3. and 4.)

Year 3

Two credits from CHEM 3P20/3P21, 3P30/3P31, 3P51/3P53; CHEM.3P40; PHYS 2P31; two elective credits. (See Notes.)

Notes:

1. CHEM 1F93 preferred; CHEM 1F85 is permitted.
2. PHYS 1F90 with a lab is preferred; note that professional schools may require an introductory physics credit with a lab.
3. Of the electives, one credit must be taken in humanities, one in social science, and the remainder normally in one or more of the sciences, mathematics or computer science (except MATH 1P60, GEOL 1F90, BIOL 1F25, SCIE 1F20 or ASTR 1F00).

Chemistry

4. MATH 2F95 is recommended for students interested in physical chemistry.

5. CHEM 3P40 is strongly recommended for students planning to enrol in CHEM 3P20 and/or CHEM 3P30.

Honors program

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 accreditation for membership in the Chemical Institute of Canada.

The honors program in chemistry consists of 20 credits and must include: PHYS 1F90 or 1F20 (See note 2.); MATH 1P93/1P94; CHEM 1F93 or 1F85 (see Note 1.), 2F10, 2P20/2P21, 2P30, 2P40/2P41, 3P20/3P21, 3P30/3P31, 3P40, 3P51/3P53, 4F90, 4F91; PHYS 2P20, 2P31; two of CHEM 4P14, 4P15, 4P21, 4P22, 4P31, 4P40; and any additional three credits in the sciences, mathematics or computer science (except MATH 1P60, GEOL 1F90, BIOL 1F25, SCIE 1F20 or ASTR 1F00).

A typical honors program:

Years 1, 2 and 3
As in pass program.

Year 4
Any of CHEM 3P20/3P21, 3P30/3P31, or 3P51/3P53 not taken in year 3; CHEM 4F90, 4F91; two of CHEM 4P14, 4P15, 4P21, 4P22, 4P31, 4P40; one elective credit.

Note: 6. 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 3. above.

Combined major programs

Combined pass and honors programs can be taken in chemistry/biology, chemistry/computer science, chemistry/geology, 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:

The first three years are typical pass programs.

Chemistry and Mathematics

Pass program

Year 1
CHEM 1F93 (preferred) or CHEM 1F85 (see Note 1.); MATH 1P93/1P94 or MATH 1P93/1P95; MATH 1P12/1P90; PHYS 1F90 or PHYS 1F20; one context credit.

Year 2
CHEM 2F10, 2P30, 2P40/2P41; MATH 2F00 or MATH 2F95; PHYS

2P20; one context credit.

Year 3
CHEM 2P20, 3P40, 3P51, 3P53; MATH 2F10 or 2P20/3P20 or 3F94; MATH 2F96; one year 3 credit in chemistry or mathematics.

Honors program

Years 1, 2 and 3
As in pass program.

Year 4
CHEM 4F90, 4F91; one of CHEM 3P20/3P21 or 3P30/3P31; two year 3 or year 4 mathematics credits. An honors program must include a minimum of three credits numbered 3(alpha)90 higher.

Chemistry and Physics

Pass Program

Year 1
CHEM 1F93 (preferred) or CHEM 1F85 (see Note 1.); PHYS 1F90 (preferred) or PHYS 1F20; MATH 1P93/1P94; two context credits.

Year 2
CHEM 2F10, 2P40 and one of 2P41 or 2P30; PHYS 2P20/2P21, 2P30/2P31; MATH 2F95.

Year 3
CHEM 2P20, 3P40, 3P51, 3P53; CHEM 2P30 or 2P41 (whichever was not taken in year 2); PHYS 3P50, 3P70; one of PHYS 3P20, 3P91, 3P92; PHYS 3F95 or MATH 2F96.

Honors program

Years 1, 2 and 3
As in pass program.

Year 4
PHYS 4F90/4F91 or CHEM 4F90/4F91; one of CHEM 3P20 or 3P30; one credit in chemistry or physics at the

year 3 or 4 level; one of PHYS 3P20, 3P31, 4P61, 4P70, one elective credit. An honors program must include a minimum of three credits numbered 3(alpha)90 or higher.

For combinations with biological sciences, geological 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.

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.

Master of Science (MSc) program

Candidates with either an honors or a pass BA or BSc degree in chemistry, or equivalent, may apply to the chairperson 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 mag-

netic 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; synthesis and structures of metal complexes with vitamins and related compounds.

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 structural 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; kinetic spectroscopy and spectrophotometry of transients produced during the flash photolysis of gases and liquids; quantum chemistry of small molecules; simulation of the Schrodinger Equation; intermolecular forces; statistical data analysis.

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 element analysis in soils and

wine; applications of FAB mass spectroscopy in analytical chemistry; applications of analytical chemistry to archaeological problems.

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 chairperson 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

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.

Description of courses

Abbreviations:

BCHM	Biochemistry
CHEM	Chemistry
MATH	Mathematics
PHYS	Physics
SCIE	Science

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

SCIE 1F20
Science, its growth and consequences
Designed for the non-science major, this course traces the development of Western and non-Western science and technology. In the second term the focus is on the social, political, ethical

and environmental consequences of modern scientific and technological activities and their implications for the future. Topics will include nuclear weapons, energy sources, pesticides, herbicides, drugs (medical and non-medical), food additives, waste disposal and pollution.
High school chemistry not required.
Lectures, 3 hours per week; seminar, 1 hour alternate weeks.

CHEM 1F85 Introduction to modern chemistry

This course covers basic chemical concepts which are necessary for all scientists. Topics include modern principles of structure and bonding, chemical equilibrium, thermochemistry, acids and bases, reaction rates and a survey of organic chemistry. Problem-solving in basic areas of chemistry is stressed. Laboratory work includes synthesis and analysis of various chemical compounds. A credit in CHEM 1F85 is acceptable for entry to advanced chemistry courses.
Prerequisite: grade 13 chemistry is recommended; grade 12 required.
Not open to students with CHEM 190 or 1F93(193) credit.
Lectures, 3 hours per week; seminar, lab, 3 hours per week.

CHEM 1F93 Chemical principles and properties

General chemistry; introduction to organic and physical chemistry. Topics include atomic and molecular structure, physical properties and intermolecular forces, chemical equilibria and reactions, thermochemistry, and an introduction to organic synthesis. Laboratory work includes synthesis, analysis, reaction kinetics and thermodynamics.
Prerequisite: grade 13 chemistry is strongly recommended; grade 12 required.
Not open to students with CHEM 1F85(185) or 190 credit.
Lectures, 3 hours per week; lab, 3 hours per week.

CHEM 2F10
Principles of physical chemistry
Chemical thermodynamics of ideal and non-ideal, homogeneous and heterogeneous systems; chemical kinetics and reaction mechanisms; quantum chemistry; spectroscopy.
Prerequisites: CHEM 1F93(193) or 1F85 (185), MATH 1P93/1P94 (193hc/194hc), or equivalent.
Lectures, 3 hours per week; lab, 3 hours per week.

CHEM 2P20
Principles of organic chemistry
(formerly CHEM 2P90 (290hc))
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 emphasizes qualitative organic analysis.
Prerequisite: CHEM 1F93(193) or CHEM 1F85(185).
Not open to students with credit in CHEM 2P90(290hc).
Lectures, 3 hours per week; lab, 3 hours per week.

CHEM 2P21
Principles of bio-organic chemistry
(formerly CHEM 2P91(291hc))
Organic chemistry of selected groups of natural products; their biological origin and significance. Laboratory work includes organic syntheses and characterization and structure determination of natural products.
Prerequisite: CHEM 2P20 (2P90 (290hc)).
Not open to students with credit in CHEM 2P91(291hc).
Lectures, 3 hours per week; lab, 3 hours per week.

CHEM 2P30
Principles of inorganic chemistry
(formerly CHEM 2P95 (295hc))
A survey of the periodic table, with stress on periodicity of chemical behavior. Emphasis will be placed on the reactions, bonding, and structures of oxides, halides and hydrides. An

introduction to transition metal complexes and crystal field theory. Experiments will complement the lecture material.

Prerequisite: CHEM 2P40(2P92(292hc)).

Not open to students with credit in CHEM 2P95(295hc).

Lectures, 3 hours per week; lab, 3 hours per week.

CHEM 2P40

Introduction to quantitative analysis (formerly CHEM 2P92 (292hc))

Theoretical and practical aspects of gravimetric and volumetric analysis. The experiments stress accurate analyses of a variety of materials.

Prerequisite: CHEM 1F93(193) or CHEM 1F85(185).

Not open to students with credit in CHEM 2P92 (292hc).

Lectures, 3 hours per week; lab, 3 hours per week.

CHEM 2P41

Intermediate quantitative analysis

(formerly CHEM 2P93(293hc))

A continuation of CHEM 2P40 (2P92 (292hc)). The lectures and lab work emphasize simple analytical instrumentation, separation techniques, the analysis of complex materials and the statistical evaluation of data.

Prerequisite: CHEM 2P40 (2P92 (292hc)).

Not open to students with credit in CHEM 2P93 (293hc).

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.)

CHEM 3P20

Structure and reactivity of organic molecules

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.

Prerequisite: CHEM 2P21 (2P91(291hc)) or permission of the department.

Co-requisite: CHEM 3P40 recommended.

Lectures, 3 hours per week; lab, 3 hours per week.

CHEM 3P21

Organic reactions

Reactive intermediates and rearrangements in organic chemistry; the chemistry of acyclic, cyclic, and heterocyclic compounds. The laboratory work is an extension of CHEM 3P20(320hc).

Prerequisite: CHEM 3P20 (320hc).

Lectures, 3 hours per week; lab, 3 hours per week.

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.

Prerequisites: CHEM 2P30 (2P95 (295hc)), CHEM 2P40 (2P92 (292hc)), CHEM 2F10 (210) and CHEM 2P20 (2P90 (290hc)) should be taken concurrently if not taken previously.

Co-requisite: CHEM 3P40 recommended.

Lectures, 3 hours per week; lab, 3 hours per week.

CHEM 3P31

Transition metal chemistry

A continuation of CHEM 3P30(330hc), emphasizing the transition elements; introduction to ligand field theory.

Prerequisite: CHEM 3P30(330hc).

Lectures, 3 hours per week; lab, 3 hours per week.

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 micro-computer controlled instrumentation, and including computerized data manipulation.

Prerequisites: CHEM 2F10 (210), 2P20 (2P90 (290hc)), 2P21 (2P91 (291hc)), 2P30 (2P95 (295hc)), 2P40 (2P92 (292hc)), 2P41 (2P93 (293hc)).

Lectures, 3 hours per week; lab, 3 hours per week.

CHEM 3P51

Quantum chemistry

Rigid rotor, harmonic oscillator, atomic structure, molecular orbital theory (diatomics and polyatomics), simple group theory.

Prerequisite: CHEM 2F10(210).

Lectures, 3 hours per week; seminar, 3 hours per week.

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 photo-physical processes.

Prerequisite: CHEM 3P51(351hc).

Lectures, 3 hours per week; lab, 3 hours per week.

CHEM 3P60

Industrial chemistry

(formerly CHEM 3P92(392hc)) Principles and practice of industrial chemistry and industrial chemical analysis. Lectures will include a survey

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of chemical industry and will deal with 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.

Prerequisite: CHEM 2P40
2P92 (292hc).

Co-requisite: CHEM 2P30 (295 (295hc)), 2P41 (2P93 (293hc)).

Not open to students with credit in CHEM 3P92(392hc).

Lectures, 3 hours per week; seminar and plant tours, 3 hours per week.

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.

Prerequisite: satisfactory completion of the year 2 chemistry degree program and permission of the department.

(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.

Prerequisite: CHEM 3P40(340hc) and honors standing or permission of the chairperson.

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.

Prerequisite: CHEM 3P40(340hc) and honors standing or permission of the chairperson.

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, magnetic phenomena.

Prerequisite: CHEM 3P51(351hc).

CHEM 3P53(353hc) should be taken concurrently if not taken previously.

Not open to students with credit in CHEM 410.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: CHEM 2F10(210) and any two third year half courses in chemistry.

Lectures, 3 hours per week.

CHEM 4P21

Organic reactions and synthesis

The development, through examples, of synthetic methodology in organic chemistry.

Prerequisite: CHEM 3P21(321hc).

Not open to students with credit in CHEM 420.

Lectures, 3 hours per week.

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.

Prerequisite: CHEM 3P21(321hc).

Not open to students with credit in CHEM 420.

Lectures, seminar, 3 hours.

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 oxgenases; chemical patterns shown in biosynthetic pathways.

Prerequisite: BCHM 3P01/3P02(301hc/302hc) and CHEM 2P21 (2P91 (291hc)).

Lectures, seminar, 3 hours per week.

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.

Prerequisite: permission of the instructor.

Lectures, 3 hours per week.

CHEM 4V30-4V35

Special topics in inorganic chemistry
Selected topics in advanced inorganic chemistry.

Prerequisite: CHEM 3P31(331hc).

Lectures, seminar, 3 hours per week.

Child Studies

Director

M. Smith, Psychology
L. Rose-Krasnor (after July 1, 1988)

Participating faculty

P. Coté-Laurence, Physical Education
N. Johnston, Psychology
M. Jordan, Psychology
Z. Marini, Child Studies
J. Mitterer, Psychology
P. Pechstedt, Child Studies
M. Perlman, Sociology
L. Rose-Krasnor, Psychology
S.J. Segalowitz, Psychology
M. Smith, Psychology
R. Young, College of Education

Sessional instructor

J. Hundert, Niagara Child Development Centre

Non-academic co-ordinator

M. Ogilvie

General information

Students interested in the field of child studies may choose between two program streams.

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. Progression to year 3 of the program is limited to those with a 65 per cent average in the required courses.

The second option combines the BA program with teacher training. The BA/BED program is designed for persons who wish to teach at the primary and junior levels and is available for full time students only. Students who complete this stream and meet other Ministry requirements, such as citizenship, may be recommended to the Ministry of Education for teaching certification in Ontario. Because the BA/BED program integrates teacher

training courses with academic courses, the student should note that the pre-service education courses are credited toward the BEd while the other courses are credited to the BA. For this reason, a student who transfers out of the BA/BED program may not have credit in pre-service education courses applied to a BA degree. Students should refer to the calendar section of the College of Education for further details on the teacher training program.

The minimum grade requirement for admission to the BA/BED program is a 75 per cent average from Ontario grade 13 or the equivalent. Further admissions may be made on an individual basis. This is a limited-enrolment program.

Students may enter the BA/BED program at the year 2 level or re-enter the program at the year 3 level if (1) their average over all years is 75 per cent or above; (2) there is room in the program; and (3) their program to date matches the BA/BED program closely enough. All such decisions will be made on an individual basis and must be approved by Child Studies.

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 per cent standing (or equivalent), may receive up to a maximum of five credits in the concurrent BA/BED program. Brock University graduates in child studies may also receive credits from Niagara College of Applied Arts & Technology toward their diploma in Early Childhood Education.

BA pass program

Year 1

PSYC 1F90; SOCI 1F90; one humanities and one science context credit; one elective credit.

Year 2

CHST 2F10; one of MATH 1F92, PSYC 2F23, or SOCI 2F10; three elective credits;

Year 3

CHST 3F21, 3F40, 3F50, 3P11; one and one half elective credits.

Concurrent pass BA/BEd program

Students in the BA/BED program must achieve a 75 per cent average in their overall standing and must maintain a 75 per cent overall average each year in all grade-marked courses. Students should also note that practice teaching may have to be scheduled in May and June of year 4.

The program consists of fifteen credits toward the BA and five teacher training courses over a four year period but because of the structure of the education courses, the credits are not evenly distributed across each year.

In EDUC course numbers:

D= 1 1/2 credits

Y= 1/4 credit.

See the College of Education section of the calendar for course descriptions.

Year 1

EDUC 8Y04, 8Y05; PSYC 1F90; SOCI 1F90; one humanities and one science context credit.

Year 2

CHST 2F10; EDUC 8P06; one of MATH 1F92, PSYC 2F23, or SOCI 2F10, two elective credits.

Year 3

CHST 3F21, 3P11; EDUC 2F00 or 3F01; EDUC 8P30, 8Y31, 8Y32; two of EDUC 8Y34, 8Y35, 8Y36; one and one half elective credits.

Year 4

CHST 3F41; 3F50; EDUC 8D09, 8F08; one elective credit.

N.B: It is advisable, because of the

Child Studies

practice teaching blocks, to have taken the year 4 elective credit during or before year 3.

Students holding an early childhood education diploma with advanced standing in five credits, will normally take the following program:

Year 2

CHST 2F10; EDUC 2F00; one of MATH 1F92, PSYC 2F23, or SOCI 2F10; one science context credit; one elective credit.

Year 3

CHST 3F21, 3P11; EDUC 8P30, 8Y04, 8Y05, 8Y31, 8Y32; two of EDUC 8Y34, 8Y35, 8Y36; one and one half elective credits.

Year 4

CHST 3F41, 3F50; EDUC 8D09, 8F08; one elective credit.

Suggested electives for Child Studies majors

Recommended science electives are BIOL 1F25 and SCIE 1F20.

Suggested non-science electives include CHST 2P94, 3F35, 3F96, 3P23, 3P56, 3P60, 3P62, 3P78, 3P84, 3P88, 3P89; EDUC 3F01; ENGL 2F10; PHED 2P00, 2P02, 2P05, 2P07, 3P04, 3P07; PSYC 2F90, 2P94, RECL 2P00, 2P06, 3P86, 3P94; SOCI 2P22; THEA 2F10; 3F09. Relevant prerequisites must be met.

Combined major program

A student taking a combined major in the BA pass program is required to complete PSYC 1F90, SOCI 1F90, CHST 2F10, 3F21, 3F40, 3F50, 3P11, and one of MATH 192, PSYC 2F23, or SOCI 2F10, as well as the course requirements of the collateral department.

Entrance into honors BA in psychology

The following courses from the child studies program may be included

among the seven credits needed to enter the honors program: CHST 2F10, 3F96, 3P11, 3P23, 3P56, 3P78, 3P84, 3P88, 3P89. PSYC 1F90 and 2F23 are required.

Students planning to apply for admission to the honors program in psychology should note that PSYC 3F40 is a prerequisite. They should consult a psychology or child studies adviser early in their child studies program about their particular courses.

Description of courses

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

CHST 2F10

Child development

Basic concepts and contemporary issues in the development of the child, including 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. Placement is required for the child studies major. Prerequisite: PSYC 1F90(190). Not open to students with credit in PSYC 2F10(210), 3F17.

Lectures, seminar, 3 hours per week.

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 pre-school children, motor development, role of play, creativity, and suitable environment for learning will be discussed. Prerequisite: PSYC 1F90(190) or permission of the instructor. Not open to students with credit in CHST 292hc.

Lectures, lab, 3 hours per week.

CHST 3F11

Issues in developmental psychology

(also offered as PSYC 3F11)

Examination of some current issues in developmental psychology, recent experimental research on them, and theoretical approaches involved. The student will study human development from an integrated approach, including biological as well as psychological viewpoints.

Prerequisite: CHST(PSYC) 2F10(210) or permission of the instructor.

Lectures, seminar, 3 hours per week. To be offered for the last time in Spring Evening 1988.

CHST 3F21

The family

(also offered as SOCI 3F21) (formerly CHST(SOCI) 3P21/3P51 (290hc/294hc))

The study of 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.

Prerequisite: CHST 2F10(210) or PSYC 2F10(210).

Not open to students with credit in CHST(SOCI) 3P21(290hc) or 3P51(294hc).

Lectures, seminar, 3 hours per week.

CHST 3F35

Integrating the special child

This course focuses on 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.

Prerequisite: permission of the instructor.

Not open to students with credit in CHST 295, 380hc/381hc; not eligible for education certificate.

Lectures, lab, seminar, 3 hours per week; practicum required.

CHST 3F40

Research methods in child development

Methods for studying children, with an emphasis on observational techniques. Other topics may include research ethics, research design, data analysis and presentation, structured assessment, and program evaluation.

Prerequisite: CHST 2F10; MATH 1F92 or PSYC 2F23 or SOCI 2F10; or permission of the instructor.

Lectures, seminar, 3 hours per week.

CHST 3F41

Research methods in child development

Methods of studying children, with an emphasis on observational techniques. Other topics may include research ethics, research design, data analysis and presentation, structured assessment and program evaluation.

Prerequisite: CHST 2F10; MATH 1F92(192) or PSYC 2F23(223) or SOCI 2F10(230); or permission of the instructor.

Open to BA/BEed students only.

Lectures, seminar, 3 hours per week.

CHST 3F50

Focus on early childhood education (also offered as EDUC 3F50)

This course will involve the study of several models of teaching derived from theories of learning and child development related to specific areas of curriculum. The models will be evaluated in relation to developmental theory and practicality in the classroom.

Prerequisite: CHST 2F10(210).

Lectures, seminar, 3 hours per week.

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 problems, i.e. the child who is mentally retarded, perceptually handicapped, etc. In a survey of current research on cognitive stimulation, attention will be given to the progress of the gifted

child. Students will be encouraged to fulfil a prearranged practicum working with an atypical child. Field trips will be arranged. Enrolment to be limited 80 students. If restrictions become necessary, they will be made on the basis of overall average.

Prerequisite: CHST 2F10(210) or PSYC 2F10(210) or three psychology courses beyond PSYC 1F90(190).

Not open to students with credit in CHST(PSYC) 300.

Lectures, seminar, 3 hours per week.

CHST 3P11

Theories of developmental psychology

(also offered as PSYC 3P11)
(formerly CHST (PSYC) 3F11)
Examination of main theoretical approaches to developmental psychology, integrating cognitive, socioemotional and biological perspectives.

Prerequisite: CHST 2F10(210) or PSYC 2F10(210) or three psychology courses beyond PSYC 1F90(190).

Not open to students with credit in CHST(PSYC) 3F11.

Lectures, seminar, 3 hours per week.

CHST 3P23

Psychology of parenting

(also offered as PSYC 3P23)
The determinants, varieties and consequences of parenting. The course will examine motivations for becoming a parent, individual differences in parenting styles, and the effect of parents on children's development. The course focuses primarily on research and theory, although applied topics such as the effectiveness of different disciplinary techniques will also be considered.

Prerequisite: CHST 2F10(210) or PSYC 2F10(210) or permission of the instructor.

Lectures, seminar, 3 hours per week.

CHST 3P56

Biological perspectives in developmental psychology

(also offered as PSYC 3P56)
Examination of current research on the role of biological factors in psychologi-

cal development. Topics include the role of genes and early biological environment in normal and abnormal development, and developmental neuropsychology.

Prerequisite: CHST 2F10 or PSYC 2F10.

Not open to students with credit in CHST(PSYC) 3F11.

Lectures, seminar, 3 hours per week.

CHST 3P60

Conflict and development

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.

Prerequisite: CHST 2F10 or permission of the instructor.

Lectures, seminar, 3 hours per week.

CHST 3P62

Brain laterality, development and implications for learning

Research data and theory based on normal, learning disabled and brain-altered subjects will be discussed in the context of the developing child. An exploration of differences in cognitive function between the two hemispheres of the brain, theories of how lateralized functioning develops and the educational implications of these findings. Other topics may include individual differences in brain organization and laterality implications for music, art, math and language.

Prerequisite: CHST 2F10 or permission of the instructor. No background in physiology is required.

Lectures, lab/seminar, 3 hours per week.

CHST 3P78

Nature, nurture and human development

(also offered as PSYC 3P78)
An examination of the interaction of genetic and environmental influences on human development. Topics to be

Child Studies

examined include biosocial determinants of morphology, personality and intelligence; family, twin and adoption studies; the plasticity of human development.

Lectures, seminar, 3 hours per week.

CHST 3P84

Advanced topics in social development

(also offered as PSYC 3P84)

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.

Prerequisite: CHST 2F10 or PSYC 2F10(210) or permission of the instructor.

Not open to students with credit in CHST(PSYC) 383 or CHST 392.

Lectures, seminar, 3 hours per week.

CHST 3P88

The psychology of reading (also offered as PSYC 3P88)

A study of the 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.

Recommended background: PSYC 2F90(290) or 3F08(308) or CHST(PSYC) 3F11(311).

Prerequisite: PSYC 1F90(190), and one of MATH 1F92(192) or PSYC 2F23(223) or SOCI 2F10(230) (may be taken concurrently).

Lectures, seminar, 3 hours per week.

CHST 3P89

Psychology of computers in education

(also offered as PSYC 3P89)

A study of 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.

Recommended background: PSYC 2F90(290) or 3F08(308) or CHST(PSYC) 3P11(3F11(311)).

NOTE: This is not a computer programming course.

Prerequisite: MATH 1F92(192) or PSYC 2F23(223) or SOCI 2F10(230) (may be taken concurrently).

Lectures, seminar, 3 hours per week.

Classics

Officers of instruction

Chairperson

F.H. Casler

Professors

A.J. Earp

N.D. Robertson

Associate professors

A.D. Booth

F.H. Casler

D.W. Rupp

Assistant professor

A.V. Soady

Part time instructor

L.L. Robertson, curator

Brock Museum of Cypriote Antiquities

General information

Schmon tower 1227

The Classics department offers two types of courses: courses in Latin, Greek or Hebrew language and literature, and courses in ancient civilization in all its aspects--literature, art, philosophy, education, history, ancient art and archaeology. The second type of course, labelled Classics, requires no knowledge of Latin, Greek or Hebrew.

A program in classical languages, either pass or honors, will consist mainly of Greek and/or Latin courses. A program in classical studies, either pass or honors, will consist mainly of classics courses. Details of both programs are given below.

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.

Pass programs (single major)

I Classical languages: a student must take eight credits in the Classics department, with at least three credits numbered 2(alpha)80 or above; four of the eight must be Latin and/or Greek credits.

II Classical studies: a student must take seven credits in the Classics department, with at least three credits numbered 2(alpha)80 or above, and may specialize in one of three areas: literature (in translation), history and religion, or ancient art and archaeology.

A. Concentration in literature: three credits in literature (in translation) and four other credits in the Classics department.

B. Concentration in history and religion: three credits in ancient history and four other credits in the Classics department.

C. Concentration in ancient art and archaeology: three credits in ancient art and archaeology and four other credits in the Classics department.

Honors programs (single major)

I Classical languages: a student must take twelve credits in the Classics

department, with at least three credits numbered 3(alpha)80 or above; seven of the twelve must be Latin and/or Greek credits.

II Classical studies: a student must take eleven credits in the Classics department, with at least three credits numbered 3(alpha)80 or above, and must specialize in one of three areas: literature, history and religion, or ancient art and archaeology:

A. Concentration in literature: two credits in Latin or Greek, five credits in literature (in translation) and four other credits in the Classics department.

B. Concentration in history and religion: two credits in Latin, Greek or Hebrew, five credits in ancient history and four other credits in the Classics department.

C. Concentration in ancient art and archaeology: two credits in Latin or Greek, five credits in ancient art and archaeology and four other credits in the Classics department.

N.B. The ancient language requirement can be fulfilled by taking: (a) LATI 1F00 and LATI 1F90 or LATI 1F90 and one advanced Latin credit; (b) GREE 1F00 and GREE 1F90 or GREE 1F90 and one advanced Greek credit; (c) LATI 1F90 or GREE 1F90 and HEBR 1F00.

III Classical languages and ancient history: a student must take fourteen credits in the Classics department, with at least three credits numbered 3(alpha)80 or above; seven of the fourteen must be Latin and/or Greek credits, and five of the fourteen must be credits in ancient history.

Combined major programs

The Classics department allows a student to combine either classical languages or classical studies with another major field. The pass program then consists of at least five credits in

Classics

the Classics department, with at least two credits numbered 2(*alpha*)80 or above, and the honors program of at least seven credits in the Classics department with at least two credits numbered 3(*alpha*)80 or above.

Students must specialize in one of three areas: literature (in translation), history and religion; ancient art and archaeology. For a pass degree, three of the minimum five classics credits must be selected from one of these areas; for an honors degree, five of the minimum seven classics credits must be selected from one of these areas.

General or Integrated Studies

A student may wish to pursue a pattern of study which does not coincide with a major or combined major program. Any such program must be approved by the dean of humanities, and may include five credits in the Classics department towards a pass degree, or seven credits in the Classics department towards an honors degree. For details, see calendar entry for general and integrated studies.

Second language requirement for humanities majors

Classics major are required to complete at least one 190-level credit in a language other than English during their first two years in the program. The recommended languages are Greek, Latin, French, German and Italian.

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 chairperson to discuss their educational objectives and career plans.

Description of courses

Abbreviations:

CLAS	Classics (given in English)
GREE	Greek
HEBR	Hebrew
LATI	Latin

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

CLAS 1P91 Greek civilization

A survey of 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.

Not open to students with credit in CLAS 190.
3 hours per week.

CLAS 1P92 Roman civilization

A survey of 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.

Not open to students with credit in CLAS 190.
3 hours per week.

CLAS 1P93 Culture and civilization of central Europe: from the prehistoric to the Carolingian period (also offered as GERM 1P93) (given in English)

This survey of 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.

Not open to students with credit in

GERM 195.
Lectures, 3 hours per week.

CLAS 1P95 Greek myths and religions

The structure and function of major Greek myths with attention to ancient and modern interpretation. Aspects of Greek religion with emphasis on means of communicating with the gods. Not open to students with credit in CLAS 196.

3 hours per week.

CLAS 1P97 Roman religions and myths

History of the development of Roman religions from the foundation of Rome until the triumph of Christianity in the Roman Empire, with attention to the formulation of a Roman mythology and eastern influences upon the traditional religious outlook.

Not open to students with credit in CLAS 196.
3 hours per week.

CLAS 2F91 Roman history

The history of Rome to the death of Marcus Aurelius (A.D. 180), with an emphasis on social and political developments from the Gracchi to Nero.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc).
3 hours per week.

CLAS 2F96 Education in the ancient world

A study of the school systems of the Greeks and Romans together with ancient educational theory; the development of Western education; the main issues faced by ancient and modern educators.

Prerequisite: two of CLAS 1P91(191hc), 1P92 (192hc), 1P93(193hc), 1P95(195hc), 1P97 (197hc) or permission of the instructor.
3 hours per week.

CLAS 2P10 Fifth-century Athens

A study of 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 B.C.: domestic life, public works, law and government, industry and trade, warfare, slavery. 3 hours per week.

CLAS 2P11

Rome under the first Caesars

A study of economic and social conditions at the acme of Roman power, with emphasis on material evidence (coins, inscriptions, the Forum, etc.). Roman realities, 50 B.C.-A.D. 79: styles of living, law and government, work and recreation, industry and commerce, slavery. 3 hours per week.

CLAS 2P30

Origins of human culture

A survey of 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 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 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.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc).

3 hours per week.

CLAS 2P51

Syro-Palestinian archaeology

Introduction to the archaeology of the Syro-Palestinian region with emphasis on the sites and artifacts from the Neolithic period to the rise of Islam; reconstructing the living conditions

during these periods.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc), or VISA 1F90(190) or permission of the instructor.

3 hours per week.

CLAS 2P61

Women in the ancient world

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

Social problems of the ancient world: a modern perspective

Social issues in Ancient Greece and Rome. Topics will include: family law; slavery and the labor force; children and the aged; health concerns; human sexuality and sexual mores; and minorities and racial prejudice.

Lectures, seminar, 3 hours per week.

CLAS 2P88

The history of early Greece

The social and political history of the Greek world down to 450 B.C. 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.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc).

Not open to students with credit in CLAS 290.

3 hours per week.

CLAS 2P89

The history of Classical Greece

The social and political history of the Greek world, 450-323 B.C. 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.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc).

Not open to students with credit in CLAS 290.

3 hours per week.

CLAS 2P93

Field archaeology

An introduction to basic archaeological theory, field techniques and procedures, and to the study of archaeological materials.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc), or VISA 1F90(190) or permission of the instructor.

3 hours per week.

CLAS 2P97

Classical archaeology

(also offered as VISA 2P97)

A survey of classical archaeology, and a detailed study of selected Greek and Roman sites.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc), or VISA 1F90(190).

3 hours per week.

CLAS 3F10

The ancient Near East

A survey of the history of the ancient civilizations of Egypt, Mesopotamia, Anatolia, the Levant and Iran.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc), or CLAS 2P51(251hc).

3 hours per week.

CLAS 3F20

Greek art and architecture

(also offered as VISA 3F20)

A survey of Greek art and architecture from the Bronze Age through the Hellenistic period within the framework of historical and cultural change.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc), or VISA 1F90(190).

Not open to students with credit in CLAS(VISA) 298.

3 hours per week.

Classics

CLAS 3F21

Roman art and architecture (also offered as VISA 3F21)

A survey of Roman art and architecture from the early Iron Age through the late Empire within the framework of historical and cultural change; with attention to the influence of the Classical heritage on early Christian/Byzantine art.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc), or VISA 1F90(190).

Not open to students with credit in CLAS(VISA) 299.
3 hours per week.

CLAS 3P00

Homer and Greek epic

A study (in English) of the two heroic epics of Homer, the *Iliad* and *Odyssey*. Topics for discussion include the conventions of epic, the oral transmission of epic verse, and the Homeric concept of the gods.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc).
Not open to students with credit in CLAS 292.
3 hours per week.

CLAS 3P01

Vergil and the literary epic

A study of the 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*.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc).
Not open to students with credit in CLAS 292.
3 hours per week.

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.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc), or DRAM 1F93(193).

Not open to students with credit in CLAS 294.
3 hours per week.

CLAS 3P03

Greek and Roman comedy and melodrama

Ancient comedy is illustrated from the works of Aristophanes, Menander, Plautus and Terence. The tragi-comic melodramas of Euripides are studied in comparison with the violent, tragic melodramas of Seneca.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc), or DRAM 1F93(193).

Not open to students with credit in CLAS 294.
3 hours per week.

CLAS 3P30

Historical linguistics

A survey of the developments of ancient writing systems (hieroglyphs, syllabaries and alphabets) into the 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.

Prerequisite: one of the following: GERM 1F00(100), GREE 1F00(100), HEBR 1F00(100), LATI 1F00(100), LBST 1F92(192) LING 1F94(194), PSYC 3F08(308), RUSS 1F00(100), SANS 1F00(100), TESL 2F50 (250).
Not open to students with credit in CLAS 420.
3 hours per week.

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.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc).

Not open to students with credit in CLAS 350.
3 hours per week.

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.

Prerequisite: two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97 (197hc).
Not open to students with credit in CLAS 350.
3 hours per week.

CLAS 3P91

Greek and Roman dialogue and dialectic

The philosophical dialogue in ancient life and literature. Popular origins; the sophists; schools and teachers; moral, social and scientific issues; the closet-dialogue. Study of Plato, Cicero, Plutarch, Lucian.

Prerequisite: a classics credit numbered 2(alpha)90 or above, or permission of the department.
3 hours per week.

CLAS 3P92

Greek and Roman satire and the novel

The satiric genre and the birth of the novel; the history of abuse from Homer to Apuleius. Incantation, invective, wonder tales, romantic novels, with special reference to models for mediaeval and Renaissance satirists and to the emergence of the picaresque hero.

Prerequisite: a classics credit numbered 2(alpha)90 or above, or permission of the department.
3 hours per week.

CLAS 4F40**Provinces and frontiers of the Greco-Roman world**

The impact of Greek and Roman culture on other ancient peoples, especially after Alexander and under the Roman Empire; with attention to Scythians, Iranians, Egypt and Judaea in the Hellenistic period; to Rome's provinces, including Gaul, Britain and North Africa; and to the barbarian invaders of the Late Empire. Topics will include the role of technology and science, military resources and strategy, imperial and local administration, education and social mobility, nationalism and sectarian religion, provincial art and architecture.

Prerequisite: a classics credit numbered 2(*alpha*)90 or above, or permission of the department.

3 hours per week.

CLAS 4F75**Archaeological practicum**

First hand training at an ancient site (fieldwork, demonstrations, and lectures); study tours of other ancient sites, monuments and museums, and/or topographical survey. Conducted at different times in France, Italy, Greece, Cyprus, and Israel. All practicums run daily for six weeks during the summer and are conducted with the assistance of local authorities.

Prerequisite: permission of the department.

CLAS 4F85**The end of the ancient world and the beginning of mediaeval Europe, A.D. 180-600**

An analysis of two of the most significant transformations in European history: the fall of the Roman Empire and the emergence of early mediaeval society, and the victory of Christianity in Europe.

Prerequisite: a classics credit numbered 2(*alpha*)90 or above, or permission of the department.

3 hours per week.

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 day session for approximately three or four weeks of intensive study abroad.

Prerequisite: permission of the department.

CLAS 4M95-4M99**Advanced study and directed research**

Intensive 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.

3 hours per week.

CLAS 4P01**Ancient historical writing and theories of history**

Royal chronicles and other records in the Near East; legends and epics; national and local history; travellers' tales and mariners' guides; contemporary history; universal history, chronology, antiquities; church history; biography and eulogy; historical romance. Readings from ancient Near Eastern and Greek and Roman literature and documents in translation.

Prerequisite: A classics credit numbered 2(*alpha*)90 or above, or permission of the department.

Not open to students with credit in CLAS 399.

3 hours per week.

CLAS 4P10**The city in the ancient world**

(also offered as VISA 4P10)

The origins and evolution of the city in the Near East; the development of the city and of city planning in Greece, Italy, and the Roman Empire from the end of the Late Bronze Age through the early Byzantine period. The forms and uses of public and private buildings,

religious and secular.

Prerequisite: a classics credit numbered 2(*alpha*)90 or above or VISA 1F90(190), or permission of the department.

Not open to students with credit in CLAS(VISA) 388hc or CLAS 396.
3 hours per week.

CLAS 4P11**The art and architecture of the ancient Near East**

(also offered as VISA 4P11)

A study of the art and architecture of Egypt, the Levant, Mesopotamia, Iran and eastern Anatolia from the Neolithic period through the Early Iron Age.

Prerequisite: a classics or a visual arts credit numbered 2(*alpha*)90 or above

Not open to students with credit in CLAS(VISA) 389hc.

3 hours per week.

CLAS 4P12**Greek sanctuaries**

(also offered as VISA 4P12)

A study of the great Panhellenic shrines (Delphi, Olympia, Epidaurus, and others): topography, architecture, art, with emphasis on the interplay between tradition and changing needs and values.

Prerequisite: a classics credit numbered 2(*alpha*)90 or above or VISA 1F90(190) or permission of the department.

Not open to students with credit in CLAS(VISA) 397hc.

3 hours per week.

CLAS 4P13**The art and archaeology of Cyprus**

(also offered as VISA 4P13)

A survey of 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.

Prerequisite: a classics credit numbered 2(*alpha*)90 or above or VISA 1F90(190), or permission of the department.

Not open to students with credit in CLAS(VISA) 398hc.

3 hours per week.

Classics

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 B.C. The art and architecture of the Minoans on Crete and the Mycenaeans on the Greek mainland will be stressed.

Prerequisite: a classics credit numbered 2(*alpha*)90 or above or VISA 1F90(190), or permission of the department.

Not open to students with credit in CLAS(VISA) 395 or 402hc.
3 hours per week.

CLAS 4P15

Topics in archaeology

An examination of current topics and problems in Greek, Roman, Cypriote and/or Near Eastern archaeology. Emphasis will be given to theoretical considerations, scientific analytical techniques, multidisciplinary research strategies and interpretation.

Prerequisite: CLAS 2P93(293hc), two ancient art/archaeology credits, one of which must be at the year 3 level, or permission of the instructor.

Not open to students with credit in CLAS 405hc.
3 hours per week.

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 1F90.

GREE 1F90

Language and literature

Review of grammar. Graded selections from various Greek authors.
Prerequisite: GREE 1F00(100) or permission of the department.
Not open to students with credit in GREE 200.
4 hours per week.

GREE 3P10

Plato

Selections from the dialogues of Plato. Greek prose composition.
Prerequisite: GREE 1F90(190).
Not open to students with credit in GREE 291.
3 hours per week.

GREE 3P20

Euripides

Selected passages from the plays of Euripides. Greek prose composition.
Prerequisite: GREE 1F90(190).
Not open to students with credit in GREE 292hc.
3 hours per week.

GREE 3P30

The Attic orators

Readings from the Attic orators.
Prerequisite: GREE 1F90(190).
Not open to students with credit in GREE 296hc.
3 hours per week.

GREE 3P40

Homer

Selected passages from Homer's epic poems, the *Iliad* and the *Odyssey*. Greek prose composition.
Prerequisite: GREE 1F90(190).
Not open to students with credit in GREE 294hc.
3 hours per week.

GREE 4M95-4M99

Advanced reading and directed research

Prerequisite: permission of the department.
3 hours per week.

GREE 4P10

Sophocles

Selected passages from the tragedies of Sophocles. Greek prose composition.
Prerequisite: GREE 1F90(190).
Not open to students with credit in GREE 291.
3 hours per week.

GREE 4P20

The Greek historians

Selections from the historical writings of Herodotus, Thucydides and Xenophon.
Prerequisite: GREE 1F90(190).

Not open to students with credit in GREE 298hc.
3 hours per week.

GREE 4P30

Greek lyric poetry

Selected poems from Alcaeus, Alcman, Anacreon, Archilochus, Mimnermus, Pindar, Sappho and Theognis. Greek prose composition.
Prerequisite: GREE 1F90(190).
Not open to students with credit in GREE 396hc.
3 hours per week.

GREE 4P40

Greek comedy

Selections from the comedies of Menander and Aristophanes. Greek prose composition.
Prerequisite: GREE 1F90(190).
Not open to students with credit in GREE 395hc.
3 hours per week.

HEBR 1F00

Hebrew language (introductory)

An introduction to biblical Hebrew, with selected readings of Old Testament passages.
Not open to students with credit in REST 100.
Lectures, language lab, 4 hours per week.

LATI 1F00

Language (introductory)

The fundamentals of Latin. Selections from various Latin authors.
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 1F90.

LATI 1F90

Language and literature

Review of grammar. Intermediate selections from Latin authors.
Prerequisite: LATI 1F00(100) or permission of the department.
Not open to students with credit in LATI 200.
4 hours per week.

LATI 3P10**Literature of the Republic: Roman comedy**

Selections from the plays of Plautus and Terence. Excerpts from early Latin prose and poetry.

Prerequisite: LATI 1F90(190).

Not open to students with credit in LATI 291hc.

3 hours per week.

LATI 3P20**Literature of the Republic: prose and poetry**

Ideals and atoms: selections from the writings of Cicero, Lucretius, and Catullus.

Prerequisite: LATI 1F90(190).

Not open to students with credit in LATI 292hc.

3 hours per week.

LATI 3P30**Augustan poetry: Vergil**

Selections from Vergil's *Georgics* and *Aeneid*.

Prerequisite: LATI 1F90(190).

Not open to students with credit in LATI 293hc.

3 hours per week.

LATI 3P40**Roman verse satire**

Readings from Horace, Juvenal and Persius.

Prerequisite: LATI 1F90(190).

Not open to students with credit in LATI 396hc.

3 hours per week.

LATI 3P50**Historians and biographers of the late republic and principate**

Selected readings from the works of Nepos, Sallust, Caesar and Livy.

Prerequisite: LATI 1F90(190).

Not open to students with credit in LATI 390.

3 hours per week.

LATI 4M95-4M99**Advanced readings and directed research**

Prerequisite: permission of the department.

3 hours per week.

LATI 4P10**Historians and biographers of the Empire**

Selected readings from the works of Tacitus, Suetonius and Ammianus Marcellinus.

Prerequisite: LATI 1F90(190).

Not open to students with credit in LATI 390.

3 hours per week.

LATI 4P20**Literature of the early Empire**

Readings from Seneca, Lucan, Pliny the Younger, Martial and Quintilian.

Prerequisite: LATI 1F90(190).

Not open to students with credit in LATI 300 or 301hc.

3 hours per week.

LATI 4P30**Augustan poetry: Horace**

Selections from the *Odes* and *Epodes* of Horace.

Prerequisite: LATI 1F90(190).

Not open to students with credit in LATI 294hc.

3 hours per week.

LATI 4P40**Roman prose satire**

Readings from Petronius, Seneca and Apuleius.

Prerequisite: LATI 1F90(190).

Not open to students with credit in LATI 397hc.

3 hours per week.

LATI 4P50**Roman elegy and pastoral poetry**

Readings from Catullus, Propertius, Tibullus, Ovid, and Vergil's *Eclogues*.

Prerequisite: LATI 1F90(190).

Not open to students with credit in LATI 302hc.

3 hours per week.

Communications Studies

Director
J.A. Lye

Associated faculty

N. Baxter-Moore, Politics
S. Edgett, Management/Marketing
B.K. Grant, Fine Arts
D.A. Harrison, Sociology
W.H.N. Hull, Politics
J.C.M. Leach, Fine Arts
J.A. Lye, English
R.D. MacDonald, English
M.J. Miller, Fine Arts
J. Nicks, Fine Arts
J.M. Preston, Psychology
M. Richards, College of Education
W. Watson, Sociology

Co-operating faculty from:
English, Fine Arts, Management/
Marketing, Politics, Psychology and
Sociology.

General information

Mackenzie Chown complex A305

Communications Studies consists of a core of communications courses supplemented by three streams which reflect the various emphases and applications of this broadly-based field of study:

- (1) Communications: social policy
- (2) Communications: culture and language
- (3) Communications: business communication.

The **Communications: social policy** stream focuses upon the interaction of specific media of communication (the electronic, film and print media and drama) and social and political forces in society. The structures of government, the processes of public policy formulation and issues of media ownership and regulation are studied in conjunction with the political and

social functions and impacts of the mass media. Particular emphasis will be given to material drawn from the Canadian context. Stress will be placed upon the development of the student's analytical and critical skills.

The **Communications: culture and language** stream provides the student with an understanding of Canadian media, with an emphasis on critical analysis as well as the cultural, linguistic and psychological bases of communication within their social contexts.

The **Communications: business communications** stream combines the study of communications with a study of the fundamentals of business policy, management and marketing. The stream aims to equip the student with a sound theoretical basis for analyzing and practising communications within the business environment.

Satisfactory completion of the first three years of the program entitles the student to a pass degree. The honors degree requires four full years of study.

Communications: social policy

Year 1
COMM 1F90; ENGL 1F91; MGMT 1P91/1P92; POLI 1F90; SOCI 1F90.

Year 2
COMM 2F24, 2P23, 2P50; POLI 2F12; SOCI 2F10; one science context credit (see Note 1.).

Year 3
COMM 3P17, 3P50, 3P60; POLI 3F51; one of COMM 4P54, SOCI 3P76; one credit from COMM 3F05, 3F08, 3F10, 3F24, DRAM 2F97, ENGL 2F91, 3F60, FILM 3F25; one elective credit (COMM 2P55, POLI 3P15, 3P16, 3P65, SOCI 2P52 recommended).

Honors program

Years 1, 2 and 3
As in pass program

Year 4
COMM 4F80, 4F99, 4P32; one of

COMM 4P54, SOCI 3P76; one credit from POLI 4P20, 4P51, 4P53, 4P81, 4V25-4V29, SOCI 4P23, 4P42, 4P45; one elective credit.

All honors programs must contain at least three credits numbered 3(*alpha*)90 or above.

Communications: culture and language

Year 1
COMM 1F90; ENGL 1F91; FILM 1F94; PSYC 1F90; SOCI 1F90.

Year 2
COMM 2F24, 2P23, 2P50; SOCI 2F10; one credit from COMM 1F94, 2F54, 2M90-2M99, VISA 1F90 or one credit in DRAM, ENGL, or FILM; one science context credit (see Note 1.).

Year 3
COMM 3F24, 3P17, 3P50, 3P60; one of COMM 2P55, 4P54, DRAM 2P91, PSYC 3P82; one credit from COMM 3F05, 3F08, 3F10, DRAM 2F97, ENGL 2F91, 3F60, FILM 3F25; one elective credit.

Honors program

Years 1, 2 and 3
As in pass program

Year 4
COMM 4F80, 4F99; one credit from COMM 2P55, 3P77, 4P32, 4P54, DRAM 2P91, PSYC 3P82, SOCI 2P52, 3P76; one credit from COMM 3F05, 3F08, 3F10, DRAM 2F97, ENGL 2F91, 3F60, FILM 3F25; one elective credit.

All honors programs must contain at least three credits numbered 3(*alpha*)90 or above.

Communications: business communication

Year 1
COMM 1F90; ENGL 1F91; MGMT 1P91/1P92, 1P94; MATH 1P98; POLI 1F90.

Year 2

COMM 2F24, 2P23, 2P50; MKTG 3P22/3P24; one science context credit (see Note 1.); one elective credit.

Year 3

COMM 3P17, 3P50, 3P60; MGMT 2P40, 3P41/3P42, 3P50; POLI 3P65; one of COMM 3F05, 3F10, 3F24, DRAM 2F97, ENGL 2F91, 3F60, FILM 3F25.

Honors program

Years 1, 2 and 3

As in pass program.

Year 4

COMM 4P32; one of COMM 4F80, 4F99; two MGMT/MKTG credits at the year 4 level, to be chosen in consultation with the program director; one and one half elective credits.

Note 1.

BIOL 1F25 or SCIE 1F20 recommended.

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

Introduction to the basic approaches and issues in communications. Topics will include the structure and uses of language, the cultural character of the Canadian media, media ownership and regulation and their implications for public policy, and the impact of the media upon public attitudes and social problems.

Lectures, seminar, 3 hours per week.

COMM 1F94

Introduction to linguistics

(also offered as LING 1F94)

Introduction to the study of language and language use. Concepts related to disciplines in the humanities, social sciences and education will be dis-

cussed. The course is not limited to any specific language; it deals with questions common to all tongues. Open to students in any year of study.

COMM 2F24

Canadian popular culture
(also offered as FILM 2F24)

A critical survey of the mass 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, 4 hours per week.

COMM 2F54

The documentary film

(also offered as FILM 2F54)

An examination of the documentary film from its beginnings in photography and the actualités of the Lumières through cinema verité and ethnographic cinema. The history, theory and aesthetics of documentary film and its relationship to the culture it documents.

Prerequisite: COMM 1F90 or FILM 1F94 or SOCI 1F90 or permission of the instructor.

Lectures, seminar, 3 hours per week; plus weekly film lab.

COMM 2M90-2M99

Special studies in communications

An examination of topics selected from year to year on the basis of specific areas of instructional expertise and student interest.

Lectures, seminar, 3 hours per week.

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.

Not open to students with credit in COMM(SOCI) 248hc.

Lectures, seminar, 3 hours per week.

COMM 2P50

Communications theory

Issues in communications, including mass media.

Prerequisite: COMM 1F90(190) or permission of the instructor.

Lectures, seminar, 3 hours per week.

COMM 2P55

Interpersonal communication

(also offered as SOCI 2P55)

An examination of perspectives on human communication including both verbal and non-verbal communication.

Not open to students with credit in COMM(SOCI) 247hc.

Lectures, lab, 3 hours per week.

COMM 3F05

Theory and criticism of television

(also offered as FILM 3F05)

A critical study of the aesthetics of television. Historical and international perspectives and alternative practices will be considered.

Prerequisite: COMM 1F90 or FILM 1F94 or permission of the instructor.

Lectures, seminar, 3 hours per week plus weekly lab.

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.

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 commu-

Communications Studies

nication, mass communication and developmental perspectives will be evaluated.

Lectures, seminar, 3 hours per week.

COMM 3F24

Canadian cinema

(also offered as FILM 3F24)

A critical history of the Canadian cinema and a study of the work of major directors.

Prerequisite: FILM 1F94 or DRAM 2F97 or permission of the instructor.

Lectures, seminar, 3 hours per week plus weekly film lab.

COMM 3P17

Politics and the mass media in Canada

(also offered as POLI 3P17)

An examination of the Canadian mass media and their relationship to the political process.

Lectures, seminar, 3 hours per week.

COMM 3P50

Media analysis

Content, formal and semiotic analysis of the various media, and a study of the communications capacities and attributes of mass media. The course will be first offered in 1988/89.

Prerequisite: COMM 1F90(190) or permission of the instructor.

Lectures, seminar, 3 hours per week.

COMM 3P60

Practicum in communications

The practical application of studies in the program in various media and forms, including promotional and analytical writing, media research and reporting projects, and media production.

Prerequisite: COMM 2P50(250hc), 3P50(350hc) and admission to the communications studies program.

Lectures, lab, 3 hours per week.

COMM 3P77

Politics and literature

(also offered as POLI 3P77)

An examination of politics in literature, especially in selected novels and plays.

The seminar emphasizes political issues and insights drawn from literary texts. The attention is given to the

differing expectations of authors, literary critics, and students of politics.

Not open to students with credit in COMM(POLI) 376hc.

Seminar, 3 hours per week.

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. In addition to their reading and written work, students in the course will be required to attend bi-monthly course seminars and to participate in staging an annual communications colloquium. The reading may not be on the topic or with the faculty member of the student's COMM 4F99 thesis.

Prerequisite: admission to year 4 of the program.

Hours as arranged with supervisor, plus seminar, 1 hour bi-monthly.

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.

Prerequisite: admission to year 4 of the program.

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.

Prerequisite: Year 4 honors standing or permission of the instructor.

Not open to students with POLI 435 taken between SE 1979 and WE 1982. Seminar, 3 hours per week.

COMM 4P54

Communication and general systems theory

(also offered as SOCI 4P54)

An introduction to the application of basic general systems theory to communication. Beginning with general systems theory's assumptions and concepts, the course explores the interrelationships between general systems theory and communication. The unifying concepts of general systems theory are utilized to develop an integrated general theory of communications or semiotics, useful across diverse disciplines.

Prerequisite: permission of instructor.

Not open to students with credit in COMM(SOCI) 396hc.

Seminar, 3 hours per week.

Computer Science and Information Processing

Officers of instruction

Chairperson.
D.J.F. Hughes

Professors
F.R. Skilton
P.A.V. Thomas

Associate professors
J. Barchanski
J. Bradford
D.J.F. Hughes
D. McCarthy
J. Mitterer
J.E. Radue
W. Wojcik

Technical assistant
R. Drabble

General information

Mackenzie Chown complex B305

The department of Computer Science and Information Processing offers courses leading to pass and honors BSc degrees in single major programs and BSc honors degrees in combined major programs. The honors program consists of three streams: hardware, software, and data processing.

Department facilities

The main computing facilities available to computer science students consist of a Digital Equipment Corporation VAX 11/780, and a Burroughs B7900 computer as described on page 11. In addition to the terminals in the junior laboratories (F-316 and F-317), there are further terminals (including graphics terminals) housed in the senior software laboratory (B304).

The department has two microcomputer labs: B309 containing 14 Macintosh personal computers and B304A containing 4 SUN supermicro workstations. In addition, a robot and robot arm are used in the robotics course.

Options for honors program

A student in the honors computer science program must select one of the three streams prior to registration for year 3. Students should consider their desired stream when selecting elective courses in years 1 and 2.

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 and 1P91 may not be held for credit by students enrolled in the major or combined major programs.

Pass program

Year 1
COSC 1P01/1P04; MATH 1F65; one humanities context credit (see Note 1.); one science context credit (see note 2.); one elective credit (see Note 3.).

Year 2
COSC 2P02/2P12; COSC 2P03/2P04; MATH 1P12/1P97; one social science context credit; one elective credit (see Note 3.).

Year 3
COSC 3F00; COSC 3P01/3P02; one other COSC credit (see Note 4.); one mathematics credit (see Note 5.); one elective credit.

Notes:

1. ENGL 1F99 strongly recommended; it is a preferred prerequisite for COSC 3F00.
 2. A student intending to pursue the hardware systems option should select PHYS 1F20(120) or, preferably, PHYS 1F90(190), either of which is a prerequisite for PHYS 2P32, required in the hardware option.
 3. A student intending to pursue the data processing option should select (in either year 1 or 2) MGMT 1P91/1P92, the prerequisites for ACTG 2P53 which is required in the data processing option.
 4. For a pass degree, University regulations require three credits numbered 2(*alpha*) 90 or above.
 5. To be selected from MATH 1P98, 2P20, 2P60, 3F65, 4P19, 4P20.
-

Honors program

Years 1 and 2
As in pass program

Software systems option

Year 3
COSC 3F00; COSC 3P01/3P02; COSC 3P13; one other COSC half credit (see Note 6.); MATH 3F65; one elective credit.

Year 4
COSC 4P07; COSC 4P13/4P14; one and one half COSC credits (see Note 6.); one mathematics credit (see Note 7.); one elective credit.

Hardware systems option

Year 3
COSC 3F00; COSC 3P01/3P02; COSC 3P21; one other COSC half credit (see Note 6.); MATH 3F65; PHYS 2P32/2P33.

Year 4
COSC 4P07; COSC 4P21/4P27; one and one half COSC credits (see Note

Computer Science and Information Processing

6.); one mathematics credit (see Note 7.); one elective credit.

Data processing option

Year 3
COSC 3F00; COSC 3P01/3P02; COSC 3P32; one other COSC half credit (see Note 6.); MATH 1P98/2P60; ACTG 2P53/2P54.

Year 4
COSC 4P07; COSC 4P31/4P32; one and one half COSC credits (see Note 6.); MGMT 3P41/4P12; one elective credit.

Notes:

6. For an honors degree, University regulations require 6 credits numbered 2(*alpha*) 90 or above, including 3 credits numbered 3(*alpha*) 90 or above.

7. To be selected from MATH 1P98, 2P20, 2P60, 4P19 or 4P20.

Computer science as a second degree

A student holding a pass or honors 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 requirements. The normal prerequisite structure must be fulfilled. Students should refer to the University regulations concerning second degrees for further information.

For a pass BSc in computer science in addition to a BAdmin (computer science option), three additional computer science credits must be included in the additional five required credits.

Required courses:

Pass program

COSC 1P01/1P04; 2P02/2P12, 2P03/2P04, 3F00, 3P01/3P02 and one other

COSC credit; MATH 1F65, (1P12 or 1P98), 1P97.

Honors program

In addition to the requirements for a second pass degree:

Three COSC credits numbered 3(*alpha*)90 or above.

Combined honors programs

The COSC requirements for combined honors programs with all other disciplines are outlined below. For the requirements in the other discipline, consult that section of the calendar.

Computer science and another science

Year 1
COSC 1P01/1P04; MATH 1F65; one MATH credit (see Note 8.); one credit in the other discipline; one social science context credit.

Year 2
COSC 2P02/2P12; one additional science credit (see Note 9.); two credits in other discipline; one humanities context credit (see Note 10.).

Year 3
COSC 2P03/2P04; one COSC credit; MATH 1P12; two credits in other discipline; one half credit elective.

Year 4
COSC 3F00; COSC 3P01/3P02; one COSC credit numbered 3(*alpha*) 90 or above; two credits in other discipline numbered 3(*alpha*) 90 or above.

Notes:

8. MATH 1P97/1P98 for geology. MATH 1P93/1P94 for physics and chemistry.

9. MATH 2F95 for physics. PHYS 1F20 or 1F90 for chemistry and geology.

10. ENGL 1F99 strongly recommended; it is a preferred prerequisite

for COSC 3F00.

Computer science and mathematics

Year 1

COSC 1P01/1P04; MATH 1F65, 1P93/1P95; one science and one social science context credit.

Year 2

COSC 2P02/2P12, 2P03/2P04; MATH 1P12, 2F95, 2P60; one humanities context credit (see Note 11.).

Year 3

COSC 3F00, 3P01/3P02; MATH 2F96, 2P20, 3F65; one half credit elective.

Year 4

Two COSC credits numbered 3(*alpha*) 90 or above; MATH 2F10 or 3F10; MATH 4P19/4P20; one elective credit.

Note:

11. ENGL 1F99 strongly recommended; it is a preferred prerequisite for COSC 3F00.

Computer science and a humanities or a social science

Year 1

COSC 1P01/1P04; MATH 1F65; one credit in other discipline; one science and one social science context credit (see Note 12.).

Year 2

COSC 2P02/2P12, 2P03/2P04; two credits in other discipline; one humanities context credit (see Note 13.).

Year 3

COSC 3P01/3P02; 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.

Notes:

12. One context credit and one elective credit if the required course in the other discipline is a social science context credit.

13. ENGL 1F99 strongly recommended; it is a preferred prerequisite for COSC 3F00

Description of courses

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.

Prerequisite: one grade 13 mathematics (minimum 65 per cent); or one university level mathematics full year credit.

Not open to students with credit in COSC 103hc or COSC 195hc.

Lectures, 3 hours per week, lab, 2 hours per week, tutorial, 1 hour per week.

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.

Prerequisite: COSC 1P01(101hc).

Not open to students with credit in COSC 230hc.

Lectures, 3 hours per week, lab, 2 hours per week, tutorial, 1 hour per week.

COSC 1P90

Computer applications

An introduction to computers and their use. This course introduces word processing, spreadsheets, data management and statistical analysis on micro computers. This is a nonprogramming course.

A computer science major or combined

major may not hold credit for this course.

May not normally be taken concurrently with or after receiving credit for COSC 1P01(101hc).

Not open to students with credit in COSC(MGMT)194hc.

Lectures, 2 hours per week, lab, 2 hours per week, tutorial 1 hour per week.

COSC 1P91

Introduction to computing

(also offered as MGMT 1P94)

An introduction to computers and computer programming for students not intending to major in computer science. Students will choose to study one of a number of programming languages by selecting the appropriate language tutorial. Students in the course will develop a number of computer programs.

A computer science major or combined major may not hold credit for this course.

May not normally be taken concurrently with or after receiving credit for COSC 1P01(101hc).

Not open to students with credit in COSC 193hc or COSC(MGMT) 194hc.

Lectures, 2 hours per week, lab, 2 hours per week, tutorial, 1 hour per week.

COSC 2P02

Computer organization

Basic computer structure. Introduction to machine language programming and computer logic: basic functions, logic gates, minimization techniques, flip-flops, registers, counters, decoders, encoders, multiplexers and PLAs.

Prerequisite: COSC 1P04(104hc) and MATH 1F65(165).

Not open to students with credit in COSC 200.

Lectures, 3 hours per week, lab, 2 hours per week.

COSC 2P03

Advanced data structures

Advanced data structures and an introduction to database systems; the implementation and usage of data structures; topics include: trees, graphs, advanced list structures, introduction to

database system concepts.

Prerequisite: COSC 1P04(104hc) and MATH 1F65(165).

Lectures, 3 hours per week, lab, 2 hours per week

COSC 2P04

File processing with COBOL

An introduction to standard BDP file processing techniques with emphasis on their implementation in COBOL; topics include: the COBOL programming language, sequential, indexed-sequential and direct file organizations, master/transaction processing, indexed and direct file update.

Prerequisite: COSC 1P04(104hc).

Not open to students with credit in COSC 206hc.

Lectures, 3 hours per week, lab 2 hours per week.

COSC 2P12

Assembly language programming

Assembly language programming for a specific computer (currently VAX-II); macros, assemblers, linkers and loaders.

Prerequisite: COSC 2P02.

Not open to students with credit in COSC 200.

Lectures, 3 hours per week, lab, 2 hours per week.

COSC 3F00

Project organization and management

An introduction to the development of medium to large scale software projects and discussion of professional issues in computing; topics include: systems analysis, the software development cycle, analysis, design, coding, testing, integration, installation, maintenance; project teams, project management; legal, ethical, moral and social issues. The class will be involved in the development of a major project in a team environment.

Prerequisite: COSC 2P03(203hc), and preferably ENGL 1F99(199).

Not open to students with credit in COSC 351hc/398hc or 390.

Lectures, 3 hours per week.

Computer Science and Information Processing

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.

Prerequisite: COSC 2P02/2P12 (200), MATH 1F65(165).

Not open to students with credit in COSC 314hc.

Lectures, 3 hours per week.

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, input/output, and memory management; concurrent processes.

Prerequisite: 2P02(200) and 2P03(203hc).

Not open to students with credit in COSC 312hc.

Lectures, 3 hours per week.

COSC 3P13

Principles of programming languages

The fundamental concepts of high-level programming languages are discussed with references to both traditional and modern languages. Topics include: data types, data control and bindings, sequence control, modularity and separate compilation and compiled vs. interpreted languages.

Prerequisite: COSC 2P12(200).

Not open to students with credit in COSC 295hc or COSC 303hc.

Lectures, 3 hours per week.

COSC 3P21

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.

Prerequisite: COSC 2P02(200).

Not open to students with credit in COSC 392hc.

Lectures, 3 hours per week, lab, 3 hours per week for 6 weeks.

COSC 3P32

Database management

Review of data structures and data management, database modeling including the CODASYL and relational models, database processing, implementation and administration; distributed databases: communication, management, data distribution and synchronization.

Prerequisite: COSC 2P03/2P04(203hc/204hc).

Not open to students with credit in COSC 342hc.

Lectures, 3 hours per week.

COSC 3P77

Applications programming languages

An introduction to programming in applications oriented programming languages.

Prerequisite: COSC 2P02/2P12(200).

May not be taken concurrently with or after receiving credit for COSC 4P17(417hc).

Not open to students with credit in COSC 207hc.

Lectures, 3 hours per week.

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.

Prerequisite: COSC 2P03(203hc).

Not open to students with credit in COSC 376hc or 380hc.

Lectures, 3 hours per week, lab, 2 hours per week.

COSC 3V90-3V99

(formerly COSC 3P97)

Computing topics I

Selected topics in computer science and information processing.

Prerequisite: permission of the chairperson.

COSC 4F70

Introduction to cognitive science

The use of computers in the creation of models of human information processes. Such computer models are examined from a computational, psychological and philosophical perspective in order to emphasize the interdisciplinary nature of cognitive science.

Prerequisite: permission of the instructor.

Not open to students with credit in COSC 3V90 or 4V90 (1987-88).

Lectures, 3 hours per week, lab, 1 hour per week.

COSC 4P07

Computing project I

A half year project course under the supervision of a faculty member from the department.

Prospective students should contact the project course coordinator, prior to registration, for further details of requirements and available projects.

Prerequisite: COSC 3F00(300).

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.

Prerequisites: COSC 2P12(200) and 3P02(302hc).

Not open to students with credit in COSC 412hc.

Lectures, 3 hours per week.

COSC 4P14

Computer networks

Study of computer network topology and architecture with special emphasis on distributed computing and telematics services; topics include: network topology design, formal specification and verification of network services and protocols, performance evaluation, network operating systems, distributed databases, teletext, videotext, messaging and other telematics services.

Prerequisite: COSC 3P01(301hc),
3P02(302hc), MATH 3F65(365).
Lectures, 3 hours per week.

COSC 4P17

Systems programming languages
An introduction to programming in
systems oriented programming
languages.

Prerequisite: COSC 2P12,
3P02(302hc).

May not be taken concurrently with or
after receiving credit for COSC
3P77(377hc).

Lectures, 3 hours per week.

COSC 4P21

Computer logic design

Review of basic logic concepts; mixed
logic, algorithmic state machines; top-
down design of logic systems using
integrated circuit elements; design of a
small computer.

Prerequisite: COSC 2P02(200).

Not open to students with credit in
COSC 393hc.

Lectures, 3 hours per week.

COSC 4P22

Real-time computing systems

An introduction to real-time computing
with application to data acquisition and
process control; topics include:
overview of real-time computing
applications, structure of real-time
systems, overview of real-time pro-
gramming, physical signal measure-
ment, transmission and processing,
digital computer/process interfacing
and real-time digital systems architec-
ture.

Prerequisite: COSC 3P02(302hc),
MATH 3F65(365).

Lectures, 3 hours per week.

COSC 4P27

Microprocessor systems

Historical development of micropro-
cessors; microprocessors and their
operations, system support compo-
nents, microprocessor systems, low-
level programming, software support,
interfacing to the real world, systems
development, advanced microproces-
sors.

Prerequisite: COSC 2P02/2P12(200),
PHYS 2P32/2P33(232hc/233hc).

Not open to students with credit in
COSC 322hc or COSC 394hc.
Lectures, 3 hours per week, lab, 2
hours alternate weeks.

COSC 4P31

Computer system management

An introduction to management of a
computer installation; a discussion of
the physical installation of a computer:
layout, site preparation, environmental
control, fire protection, insurance, and
security of the installation; other topics
include: usage accounting, system
balancing and tuning, staffing, con-
tracts, and the implications of federal
and provincial regulations.

Prerequisite: COSC 3P02(302hc).

Lectures, 3 hours per week.

COSC 4P32

Personal computing systems

An investigation of a modern micro-
computer system, primarily from the
perspective of the operating system;
programming to interact with the
operating system. Topics include:
memory management, file manage-
ment, windows, menus, events and
graphics.

Prerequisite: COSC 3P01(301hc),
3P02(302hc).

Lectures, 3 hours per week.

COSC 4P71

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.

Prerequisite: COSC 2P03(203hc).

Not open to students with credit in
COSC 470 or 472hc.

Lectures, 3 hours per week.

COSC 4P75

Compiler construction

An introduction to the study of
compilers; topics include: lexical,
syntactic and semantic analysis of high
level languages; symbol table organiza-
tion; code generation and optimization.

Prerequisite: COSC 3P13(313hc).
Not open to students with credit in
COSC 395hc.

Lectures, 3 hours per week.

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, optimi-
zation procedures, sample size and
stopping rules; modeling techniques for
system inputs; verification and valida-
tion procedures; a critique of the
simulation approach.

Prerequisite: COSC 1P04(104hc),
MATH 1P97/1P98(197hc/198hc).

Lectures, 3 hours per week.

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.

Prerequisite: COSC 2P02/2P12 (200).

Lectures, 3 hours per week, lab, 1 hour
per week.

COSC 4P79

Expert systems

Development of expert systems.
Topics include: recognition of prob-
lems 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.
Prerequisite: COSC 2P03(203hc).
Not open to students with credit in
COSC 397hc (1986-87) or 3V97
(1987-88).

Lectures, 3 hours per week, lab, 2
hours per week.

Computer Science and Information Processing

COSC 4P98

Computing project II

A half year project course under the supervision of a faculty member from the department.

Prospective students should contact the project course coordinator, prior to registration, for further details of requirements and available projects.
Prerequisite: COSC 4P07(407hc).

COSC 4V90-4V99

Computing topics II (formerly COSC 4P97)

Selected topics in computer science and information processing.
Prerequisite: permission of the chairperson.

Economics

Officers of instruction

Chairperson
R.E. Robb

Professor
G. Temkin

Associate professors
R. W. Dimand
M. Dore
L.B. Eden
J. Kushner
I.J. Masse
R.E. Robb
L.A. Soroka

Assistant professors
H. Imam
Z. Koustas
F. I. Martinello
T.A. Peters
W. Veloce
F. Zandi

Lecturer
A. Ward

Professor emeritus
M.F. Perkins

General information

Schmon tower 1217

Economics is the study of how people and society choose to employ scarce resources to produce various goods and services over time and distribute them for consumption among various groups in society. The basic theoretical framework in economics is divided into two parts: micro-economic theory, where the focus of analysis is on the determination of prices and the allocation of scarce resources among competing uses; and macro-economic theory, which focuses on the level of utilization of resources--especially the level of employment and the general

level of prices. The basic theoretical tools are then applied to the analysis of problems with respect to the labor market, industrial organization, international trade, economic development, urban studies, public finance, etc. From these analyses, theoretical predictions emerge which are often used as a basis for the formulation of economic policy.

ECON 1P91/1P92(191hc/192hc) are prerequisites for all other economics courses.

All students in economics, especially those proceeding to graduate work or to a career in the civil service, will be encouraged to become proficient in a language other than English (normally French).

A knowledge of the other social sciences is advisable for all students in economics programs. Students are encouraged to consider courses in administrative studies, sociology, politics and history.

Mathematics is an important analytical tool for professional economists. Students intending to pursue graduate work are strongly advised to take additional mathematics courses and should consult the department regarding appropriate choices.

Students who wish to qualify for the civil service ES1 classification are reminded that the minimum requirement for such classification is eight credits in economics.

Pass program

Seven and one half credits are required for a pass degree in economics.

Year 1
ECON 1P91/1P92; MATH 1P60/1P97; one humanities and one science context credit; one elective credit.

Please note: Students having two or more Grade 13 MATH credits with an average mark of at least 75 per cent, or

who have completed MATH 1P97 without completing MATH 1P60 may be exempted from MATH 1P60. MATH 2P60 or an economics course in proper sequence must be substituted for MATH 1P60 in such cases.

Year 2
ECON 2P21/2P22, 2P31/2P32, 2P90; one economics credit; MATH 1P98; one elective credit.

Year 3
Three year 3 economics credits; two elective credits.

Honors program

Years 1, 2 and 3
As in pass program with the exception that ECON 3P91 is required, and should be taken prior to year 4.

Year 4
ECON 3P90, 4F90, 4P13, 4P14; one and one half year 3 or year 4 level economics credits; one elective credit.

Combined major programs

Students may take economics as part of a combined major pass or honors program. The programs for combined degrees in administrative studies, computer science, geography, mathematics, and politics are listed below. Other combinations are available; students may consult the department about these programs.

Economics and Administrative Studies

Honors program

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,

Economics

2P90, ACTG 2P53/2P54; MGMT 3F51 or MGMT 3P50/POLI 3P65; MATH 1P98; one science or humanities context credit (whichever was not taken in year 1).

Year 3

ECON 2P31/2P32, one other economics credit; FNCE 3P92/3P93; MGMT 3P41/3P42; MKTG 3P22/3P24.

Year 4

ECON 3P90, 3P91, 4P13, 4P14; MGMT 1P95, 2P40; one credit in ACTG/FNCE/MGMT/MKTG; one elective credit.

Economics and Computer Science

Honors program

Year 1

ECON 1P91/1P92; COSC 1P01/1P04; MATH 1F65, 1P97/1P98; one science context credit.

Year 2

ECON 2P21/2P22, 2P31/2P32; COSC 2P02/2P12, 2P03/2P04; one humanities context credit (see Note 1.).

Year 3

ECON 2P90; one and one half year 3 or year 4 level economics credits; COSC 3P01, 3P02; one computer science 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.

Note 1.

ENGL 1F99 is strongly recommended; it is a preferred prerequisite for COSC 3F00.

Economics and Geography

Pass 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/ECON 2P90 or GEOG 2P07/2P08; GEOG 2P02, 2P03, 2P06 and one further half credit in geography.

Year 3

Two year 3 credits in economics; GEOG 3P57; one and one half year 3 credits in geography from group A (see Geography section of the calendar) excluding GEOG 2P90, 2P91 and 2P92; one elective credit.

Honors program

Years 1, 2 and 3

As in pass program

Year 4

ECON 3P90, 3P91, 4P13, 4P14; GEOG 4F99; one year 4 credit in geography from group A; one elective credit.

Economics and Mathematics

Pass program

Year 1

ECON 1P91/1P92; MATH 1P12, 1P93; MATH 1P94 or 1P95; COSC 1P93; one humanities and one science context credit.

Year 2

ECON 2P21/2P22, 2P31/2P32; MATH 1P98/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 economics credits; MATH 2F10; one elective credit.

Honors program

Years 1, 2 and 3

As in pass program.

Year 4

ECON 3P58/4P58 or 3P59/4P59 (whichever was not taken in year 3), 3P90, 4F90, 4P13, 4P14; MATH 4F21; one half credit elective.

Note:

MATH 2F96 is a prerequisite for MATH 4F21 and must be taken for the honors program.

Economics and Politics

Pass 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 politics credits including POLI 2P01/2P81.

Year 3

Two year 3 economics credits; two year 3 politics credits; one elective credit.

Honors program

Years 1, 2 and 3

As in pass program with the exception that POLI 2F90 is recommended. If POLI 2P01 is taken, one of POLI 3P05, 4P01, 4P02 or 4P03 is required by the end of year 4.

Year 4

ECON 3P90, 3P91, 4P13, 4P14; two year 4 politics credits (including POLI 4P05 or 4P08 if 3P09 not already taken); one elective credit.

Economics and Urban and Environmental Studies

See Urban and Environmental Studies.

Bachelor of Business Economics

See separate calendar entry for Bachelor of Business Economics degree requirements and for transition to the honors economics degree.

Description of courses

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 the study of microeconomics. Topics include the nature of economics, the price system, demand, production and cost, markets and pricing, factor pricing and the distribution of income.

Not open to students with credit in ECON 190.

Lectures, seminar, 4 hours per week.

ECON 1P92**Principles of macroeconomics**

An introduction to the study of 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.

Not open to students with credit in ECON 190.

Lectures, seminar, 4 hours per week.

ECON 2F95**Canadian economic policy**

A study of 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, etc.

Prerequisite: ECON 1P91/1P92 (191hc/192hc).

Lectures, 3 hours per week.

ECON 2P09**Canadian economic history**

A study of the economic development of Canada.

Prerequisite: ECON 1P91/1P92 (191hc/192hc).

Lectures, 3 hours per week.

ECON 2P10**United States economic history**

A study of the economic development of the United States.

Prerequisite: ECON 1P91/1P92 (191hc/192hc).

Lectures, 3 hours per week.

ECON 2P11**European economic history**

A study of the economic history of the western world including an analysis of the factors explaining the industrial revolution.

Prerequisite: ECON 1P91/1P92 (191hc/192hc).

Lectures, 3 hours per week.

ECON 2P15**The economics of unions**

A study of trade unions in the marketplace. Topics such as: theory of collective bargaining, unions and discrimination, the effect of unions on productivity, the impact of unions on relative wages and income distribution, how unionized markets influence national output, the political and economic power of unions and the differences between public and private sector unions will be discussed.

Prerequisite: ECON 1P91/1P92 (191hc/192hc).

Lectures, 3 hours per week.

ECON 2P17**Economic development**

A study of 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.

Prerequisite: ECON 1P91/1P92 (191hc/192hc).

Not open to students with credit in ECON 317hc.

Lectures, 3 hours per week.

ECON 2P21**Intermediate microeconomics I**

A study of 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.

Prerequisite: ECON 1P91/1P92 (191hc/192hc).

Not open to students with credit in ECON 201, 203, 251hc or 2P23.

Lectures, seminar, 4 hours per week.

ECON 2P22**Intermediate macroeconomics I**

A study of 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.

Prerequisite: ECON 1P91/1P92 (191hc/192hc).

Not open to students with credit in ECON 202, 203, 252hc.

Lectures, seminar, 4 hours per week.

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.

Prerequisite: ECON 1P91/1P92 (191hc/192hc).

Not open to students with credit in ECON 201, 203, 2P21 (251hc).

This course is primarily designed for students in the honors administration program.

Lectures, seminar, 4 hours per week.

ECON 2P31**Intermediate microeconomics II**

A continuation of ECON 2P21(221hc). Topics include the models of market structure such as monopoly, duopoly, oligopoly and monopolistic competition; the demand and supply of factors

Economics

of production under perfect and imperfect markets; and an introduction to the general equilibrium model and welfare theory. Applications of theory are emphasized.

Prerequisite: ECON 2P21(221hc) or 2P23.

Not open to students with credit in ECON 201, 203.

Lectures, 3 hours per week.

ECON 2P32

Intermediate macroeconomics II

A continuation of ECON 2P22(222hc) 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.

Prerequisite: ECON 2P22(222hc).

Not open to students with credit in ECON 202, 203.

Lectures, 3 hours per week.

ECON 2P90

Economic statistics

Description statistics, probability, probability distributions, statistical estimation, hypothesis testing and correlation analysis with emphasis on economic and business applications. Introduction to simple and multiple regression analysis.

Prerequisite: MATH 1F92(192), or 1P98(198hc), or equivalent; ECON 1P91/1P92(191hc/192hc).

Not open to mathematics majors, or students who have taken or are taking MATH 2F96(296).

Lectures, seminar, 4 hours per week.

ECON 3F02

History of economic thought

The development of economic analysis including mercantilism, the classical school, Marx, marginalism, Keynes, and others.

Prerequisite: ECON 2P21(221hc) or 2P23 or equivalent.

Lectures, 3 hours per week.

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.

Prerequisite: ECON 2P21(221hc) or 2P23, ECON 2P22(222hc) or equivalent.

Lectures, 3 hours per week.

ECON 3F06

Industrial organization

A study of the structure, conduct and performance of industrial markets with readings on the role of government in maintaining effective competition.

Prerequisite: ECON 2P21(221hc) or 2P23 or equivalent.

Lectures, 3 hours per week.

ECON 3F07

Comparative economic systems

A study of alternative economic systems, including centrally directed economies, with emphasis on planning as a substitute for markets.

Prerequisite: ECON 2P21(221hc) or 2P23 or equivalent.

Lectures, 3 hours per week.

ECON 3P11

International trade

The pure theory of international trade and commercial policy.

Prerequisite: ECON 2P21(221hc) or 2P23 or equivalent.

Not open to students with credit in ECON 301 or 4P21.

Lectures, 3 hours per week.

ECON 3P12

International payments

Foreign exchange markets and the balance of payments, adjustment in the balance of payments and international monetary institutions.

Prerequisite: ECON 2P22(222hc) or equivalent.

Not open to students with credit in ECON 301 or 4P21.

Lectures, 3 hours per week.

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.

Prerequisite: ECON 2P21(221hc) or 2P23 or equivalent.

(ECON 3P11 is recommended).

Lectures, 3 hours per week.

ECON 3P14

Public finance: 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.

Prerequisite: ECON 2P21(221hc) or 2P23 or equivalent.

Not open to students with credit in ECON 304 or 4P15.

Lectures, 3 hours per week.

ECON 3P15

Public finance: 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.

Prerequisite: ECON 2P21(221hc) or 2P23, or equivalent.

(ECON 3P14 is recommended).

Not open to students with credit in ECON 304 or 4P15.

Lectures, 3 hours per week.

ECON 3P16

Economic growth and business cycles

A study of 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.

Prerequisite: ECON 2P22(222hc) or equivalent.

Lectures, 3 hours per week.

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.

Prerequisite: ECON 2P21(221hc) or

2P23 or equivalent.
Not open to students with credit in ECON 308.
Lectures, 3 hours per week.

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 Union'. Regional development policies in Canada, the U.K. and France.

Prerequisite: ECON 2P22(222hc) or equivalent.

Not open to students with credit in ECON 308.

Lectures, 3 hours per week.

ECON 3P24

Labor economics

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.

Prerequisite: ECON 2P21(221hc) or 2P23 or equivalent.

Not open to students with credit in ECON 205.

Lectures, 3 hours per week.

ECON 3P25

Topics in labor economics

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.

Prerequisite: ECON 2P21(221hc) or 2P23 or equivalent.

(ECON 3P24 is recommended).

Not open to students with credit in ECON 205.

Lectures, 3 hours per week.

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 govern-

ment deficit-financing and money neutrality.

Prerequisite: ECON 2P22(222hc) or equivalent.

Not open to students with credit in ECON 4P26.

Lectures, 3 hours per week.

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.

Prerequisite: ECON 2P21(221hc) or 2P23 or equivalent.

Lectures, 3 hours per week.

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.

Prerequisite: MATH 2P60(260hc).

Lectures, 4 hours per week.

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 modeling; decision theory, subjective probability, and Bayesian statistics; simulation; sampling theory; design and analysis of experiments; discussion and analysis of selected cases.

Prerequisite: MATH 2P60(260hc) or permission of the instructor.

Lectures, 4 hours per week.

ECON 3P90

Introduction to econometrics (formerly ECON 4P12)

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 modeling such as autocorrelation, heteroscedasticity, stochastic regressors will be studied. An introduction to simultaneous equations modeling. Course blends theory and application with examples taken from many different areas of economics.

Prerequisite: ECON 2P21(221hc) or 2P23, 2P22(222hc), and 2P90(290hc), or permission of the department.

Not open to students with credit in ECON 4P12(412hc).

Lectures, 3 hours per week.

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.

Prerequisite: ECON 2P21(221hc) or 2P23, ECON 2P22(222hc); or equivalent; MATH 1P97(197).

Not open to students with credit in ECON 411hc or to students majoring in mathematics.

Lectures, 3 hours per week.

ECON 3P92

Forecasting in economics

Basic concepts of economic and business forecasting such as extrapolative time series methods, Box-Jenkins schemes, and regression based forecasts, as well as their evaluation. Practical applications, such as choosing leading indicators to predict swings in the economy and population forecasting, will be an integral part of the course.

Prerequisite: ECON 2P21(221hc) or 2P23; ECON 2P22(222hc) and 2P90(290hc).

Lectures, 3 hours per week.

Economics

ECON 4F90

Research topic

A program of semi-independent reading and research under the supervision of a member of the staff on a topic acceptable to the department.

Prerequisite: restricted to students in year 4 who are taking an honors degree in economics.

ECON 4P13

Advanced macroeconomics

A study of advanced macro theory supplemented with readings and discussions of recent periodical literature.

Prerequisite: fourth year honors standing or permission of the department.

Lectures, 3 hours per week.

ECON 4P14

Advanced microeconomics

A study of advanced micro theory with emphasis on mathematical presentation. Topics covered will include theory of consumer behavior, theory of the firm market equilibrium, imperfect competition, welfare economics, input-output analysis, game theory and linear programming.

Prerequisite: fourth year honors standing or permission of the department.

Lectures, 3 hours per week.

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.

Prerequisite: ECON 2P31/2P32(231hc/232hc) and 3P91(391hc) or permission of the department.

Lectures, 3 hours per week

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.

Prerequisite: ECON 2P31/2P32 (231hc/232hc) and 3P91(391hc) or permission of the department.

Lectures, 3 hours per week.

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.

Prerequisite: ECON 2P31/2P32 (231hc/232hc) and 3P91(391hc) or permission of the department.

Lectures, 3 hours per week.

Note: One of ECON 4P15, 4P21, 4P26 will be offered each year.

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.

Prerequisite: ECON 3P58(358hc) or permission of the instructor.

Lectures, 4 hours per week.

ECON 4P59

Operations research applications B

(also offered as MATH 4P59)
Applications of modeling; 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.

Prerequisite: ECON 3P59(359hc) or permission of the department.

Lectures, 4 hours per week.

ECON 4V80-4V89

Topics in management I

(Also offered as MGMT 4V90-4V99 and POLI 4V10-4V19)

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

1988-89: (4V80)

Topics in public policy I

(also offered as MGMT 4V90)

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.

Prerequisite: restricted to year 4 students; consent of the chairperson and supervising faculty member.

Seminars, discussion, guest lecturers, 3 hours per week.

1988/89: (4V81)

Topics in public policy II

(also offered as MGMT 4V91)

Public policy planning, analysis and implementation. The central focus will be on industrial, regional, social and science and technology policies.

Prerequisite: restricted to year 4 students; consent of the chairperson and supervising faculty member.

Seminars, discussion, guest lecturers, 3 hours per week.

1988/89: (4V84)

Public Policy: advice and processes

(also offered as MGMT 4V94 and POLI 4V14)

Public policy advice and implementation. The central focus will be on a variety of institutions and significant policy-oriented interests, activities and/or mandates; as well as on key processes of policy making.

Prerequisite: restricted to year 4 students; consent of the chairperson and supervising faculty member.

Seminars, discussion, guest lecturers, 3 hours per week.

College of Education

Officers of instruction

Dean

P.J. Atherton

Associate Dean

A.C. Bennett

Department of Continuing Studies

Chairperson

V. Cicci

Members of this department are selected from the departments of Graduate and Undergraduate Studies in Education and Pre-service Education.

Department of Graduate and Undergraduate Studies in Education

Chairperson

A. Wheeler

Professors

P.J. Atherton

R. Knoop

J.M. Novak

Associate professors

A.C. Bennett

R.W. Common

P. Cranton

J.P. Gram

G.P. O'Neill

L. Popp

J. Wagner

A.E. Wheeler

Assistant professors

C. Reynolds

R. Young

Lecturer

M. Kompf

Professor emeritus

R.B. Moase

Department of pre-service education

Chairperson

R.D. Connelly

Professor

R. D. Connelly

Associate professors

R.T. Chodzinski

V. Cicci

W.L.R. Crane

R.C. Henderson

J.H. Love

W.B. MacDonald

A.S. Mollica

W.B. Poole

M. Richards

A. Thomas

S.E. Wilson

Assistant professors

J. Castle

D.H. Dworet

L. Fast

J. Kearns

M. Walsh

Special lecturers

J. Kerr

S. Ward

Sessional lecturers

A. Elliott

I. Purchase

Tutors

L. Anderson-Kozik, Thorold S.S.,

home economics/family studies

P. Bauer, Laura Secord S.S., German

P. Cheevers, Governor Simcoe S.S.,

computer science

K. Draayer, Governor Simcoe S.S.,

English

G. Gamble, Westpark S.S., geography

J. Gammage, Sir Winston Churchill

S.S., physical education

G. Huber, Port Colborne S.S., history

R. McLaughlin, Governor Simcoe S.S.,

English

A. Moss, Stamford C.I., biology/chem-

istry/science/physics

B. Mozina, Beamsville S.S., mathemat-

ics

T. Palmer, Lincoln Board Office,

business education/accounting/

consumer education/data processing
R. Rosinski, Bertie Elementary School,
Ridgeway, intermediate basics
M. Sanderson, Thorold S.S., business
education/secretarial science
P. Waters, St. Catharines Collegiate,
visual arts
T. Welbourn, Grimsby S.S., theatre
arts/drama

General information

The College 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 College offers programs leading to BEd and MEd degrees. It 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 supervision of counsellors working with small groups of students in teaching centres located in schools throughout the Niagara peninsula and the city of Hamilton. Students who are accepted into the BEd program to teach in secondary schools are assigned to work with specialized subject area tutors in peninsula high schools.

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 degrees and teacher certification is also available. Interested students should consult the entry under Child

Education

Studies.

A program in teaching English as a second language is also available. It should be noted that this program does not lead to Ontario teacher certification. Students who wish to prepare themselves for teaching English as a second language in the public schools of Ontario should first pursue the BEd (Route I) program. Those interested in TESL should consult the Applied Language Studies entry in the calendar.

Graduate programs

The College 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 Studies 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, 3F01, 3F50.

Bachelor of Education programs

The College offers three routes leading to the conferring of the BEd degree.

Route 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).

Route II

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 chairperson of the department of Continuing Studies. 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.

Route III

A BEd program leading to the awarding of the BEd as a first degree.

Pre-Service program

Admission requirements

BEd Route I

Candidates are encouraged to have some experience in working with children and youth.

Enrolment in the College of Education is limited to approximately 300 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 courses and experience as submitted on the Brock Experience Profile form. Only candidates with a minimum B average on their top ten courses will be considered. The experience profile is a significant part of the selection process so applicants are asked to fill it out with care.

Applications, official transcripts and Experience Profiles must be received by January 15, 1989.

(i) Primary/Junior - (Kindergarden through Grade 6)- Candidates must have an area of concentration of at least FIVE courses. Preference will be given to Primary/Junior candidates with a major in Child Studies.

(ii) Junior/Intermediate- (Grade 4 through Grade 10) - Candidates must have at least TWO full courses in each of TWO of the teachable areas as listed under Program requirements. Junior/Intermediate candidates should note that although two teachable subjects are required for admission, only one of these will be reported to and recorded by the Ministry of Education.

(iii) Intermediate/Senior- (Grade 7 through Grade 12) Candidates must have at least FIVE full courses in one teachable area and THREE full courses in a second teachable area as listed under Program requirements.

Note: An extension of the secondary program is offered in cooperation 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 chairperson.

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; in the case of a candidate who is a married woman who wishes to have her certificate issued in her married name, a certificate of marriage or other acceptable proof that she is the person referred to in the certificate or other document

submitted under clause (a);

(c) proof of freedom from active tuberculosis (O.Reg 407/78, s.2).

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. 222/86).

Because of the highly integrated nature of the program, students who have pre-registered must be present for orientation on registration day.

A few students 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 chairperson.

Program Requirements

Route I

The student in Route I is expected to gain competence in the following main fields of study:

(i) a concentrated study of one of the following combinations:

Primary-Junior division
(Grades K-6)

Junior-Intermediate division
(Grades 4-10)

Intermediate-Senior division
(Grades 7-13).

A student who wishes to specialize at the Junior/Intermediate level must select TWO teachable subjects at the 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.

A student who wishes to specialize at the Intermediate/Senior level must select TWO teachable subjects at the Intermediate/Senior level. Teaching subjects offered are as follows:

accounting
data processing
marketing and merchandising
secretarial studies
computer science
dramatic arts
English
French (Second Language)
geography
German
history
home economics/family studies
Italian
mathematics
physical and health education
political science
science--general
science--biology
science--chemistry
science--physics
Spanish
visual arts

N.B. For information concerning prerequisites for teaching subjects refer to the section on program admission requirements.

(ii) studies in education including learning and development throughout the primary, junior, intermediate, and senior division;

(iii) teaching methods designed to meet the individual needs of pupils;

(iv) the acts and regulations respecting

education;

(v) a review of the curriculum guidelines related to all of the divisions and a study of curriculum development;

(vi) ten weeks of practical experience in schools.

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 compulsory and elective courses necessary to meet Ministry certification requirements.

Compulsory core for all students
EDUC 8D09 - Field studies, individualized instruction and practicum
EDUC 8F08 - Teaching techniques for the classroom
EDUC 8Y04 - Current trends and issues in special education
EDUC 8Y05 - The education enterprise
EDUC 8P06 - Classroom dynamics-teaching and learning

Teaching options

Depending on the selected concentration and subject background, each student will select from the following:

a) Primary/Junior compulsory -
EDUC 8P30 Primary/junior language arts and reading
EDUC 8Y31 - Primary/junior mathematics
EDUC 8Y32 - Primary/junior social and environmental studies

two electives from:
EDUC 8Y34 Primary/junior art
EDUC 8Y35 Primary/junior music
EDUC 8Y36 Primary/junior physical education

(b) Junior/Intermediate compulsory-
EDUC 8Y20 Junior/intermediate language arts
EDUC 8Y21 Junior/intermediate mathematics
EDUC 8Y22 Junior./intermediate social studies
EDUC 8Y23 Junior/intermediate

Education

science

two electives from:

EDUC 8Y24 Junior/intermediate art
EDUC 8Y25 Junior/intermediate music
EDUC 8Y26 Junior/intermediate
physical education
EDUC 8Y27 Junior/intermediate
reading

(c) Intermediate/Senior compulsory
EDUC 8P70 Intermediate basics

two electives from:

EDUC 8P71 Business education -
intermediate/senior
EDUC 8P72 Computer science -
intermediate/senior
EDUC 8P73 Theatre arts -
intermediate senior
EDUC 8P74 English (first language) -
intermediate/senior
EDUC 8P75 Family studies-
intermediate/senior
EDUC 8P76 French as a second
language - intermediate/senior
EDUC 8P77 Geography -
intermediate/senior
EDUC 8P78 German -
intermediate/senior
EDUC 8P79 History and political
science - intermediate/senior
EDUC 8P80 Italian and Spanish -
intermediate/senior
EDUC 8P81 Mathematics -
intermediate/senior
EDUC 8P82 Physical and health
education - intermediate/senior
EDUC 8P83 Science -
intermediate/senior
EDUC 8P84 Visual arts -
intermediate/senior

In addition to the above requirements the College 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 Minister 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 observation and practice teaching. A student whose performance in practice teaching is recorded as seriously inadequate will be assessed externally. The result of this assessment will determine eligibility to proceed with practice teaching. In the interest of the pupils' welfare, the College will exercise the responsibility to remove a student from the classroom where performance so warrants.

Note: Though placements for practice teaching will be arranged by College faculty, transportation for these visits, many of which require the use of a car, is the responsibility of the student.

For further information regarding the Route I program, candidates should contact the chairperson, Pre-Service department.

Continuing Studies

Admission requirements

BEd Route II

Candidates for admission are required to hold an undergraduate degree acceptable to Brock University or the OTC or its equivalent. Candidates who hold the OTC but who have not completed the requirements for an undergraduate degree may be admitted to Route II and complete the requirements for the BEd. The conferring of the degree will be withheld until evidence of the attainment of the undergraduate degree is presented to the registrar.

Note:

The BEd Route II degree does not lead

to the basic teacher certification (OTC) in Ontario. Those interested in obtaining the Ontario Teaching Certificate should refer to the BEd Route I program.

All candidates admitted to the BEd (Route II) should note, however:

- 1) transcripts showing work completed towards the degree will be available from 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) education courses numbered 9(alpha)00 and above may not be used for initial basic certification (OTC) purposes.

Advanced standing

Candidates for admission to Route 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 BEd Route II degree. For further information, contact the chairperson, department of Continuing Studies.

Note Re: QECO

The University has been advised that the Qualifications Evaluation Council of Ontario (QECO) normally accepts each course in the BEd (Route II) program as either a university credit or a Ministry 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 chairperson of the department of Continuing Studies in the College of Education. Documentation must be complete before any recommendation can be made to the Ministry.

Program requirements

Route II

Candidates entering Route 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.

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 full course equivalents at Brock. The increase is required to satisfy the practicum component.

N.B. 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 Route II programs, candidates should consult the chairperson, department of Continuing Studies.

BEd as a first degree

(Does not lead to Ontario certification.)

Admission requirements

BEd Route III

Generally speaking, the admission requirements for admission to the BEd (Route 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 chairperson of the department of Graduate and Undergraduate Studies in the College of Education.

Program Requirements

Route III

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 College of Education (EDUC 2F00, 3F01, or 3F50) 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, 3F01 and 3F50 are open to all students 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. A maximum of five full courses (or equivalent credit) towards a pass BA or BSc and seven full courses (or equivalent) towards an honors BA or BSc degree may be taken from administrative studies, teaching English as a second language or designated education, physical education or recreation courses.

EDUC 1F90

Introduction to education studies

An introduction to major issues and problems in the organization, staffing, and planning of schools and school services today, with special reference to the Niagara peninsula. Lectures, programmed and supervised study, 3 hours per week.

EDUC 2F00

Curriculum theory and design

An examination of curriculum both as a conceptual scheme based on theories of learning and as a system of complex human interactions in the school and community. Various designs for curriculum planning and associated instructional modes are also examined. Students are expected to design, implement, and evaluate a curriculum plan.

Prerequisite: a course in educational or developmental psychology; or two years of classroom teaching; or permission of the instructor. Lectures, seminar, 3 hours per week, and field work.

Education

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. The course will involve the student in 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 3F01(301) is a recommended prerequisite for EDUC(CHST) 3F50.)

EDUC 3F50

Focus on early childhood education (also offered as CHST 3F50)

This course will involve the study of several models of teaching derived from theories of learning and child development related to specific areas of curriculum. The models will be evaluated in relation to developmental theory and practicality in the classroom.

Prerequisite: CHST(PSYC) 2F10(210);
EDUC 3F01(301) recommended.
Lectures, seminar, 3 hours per week.

(not for undergraduate credit)

EDUC 3F99

Advanced project in educational studies

A course emphasizing 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.
Prerequisite: approval of the department of Graduate and Undergraduate Studies in Education.

(Not open to students with credit in EDUC 495.)

(TESL Courses)

EDUC 4F00

Analysis of discourse

(also offered as TESL 4F00)

Study of the various techniques and frameworks for the analysis of written and spoken discourse, with special reference to applications in second-language acquisition. Lectures will outline approaches to discourse analysis and related initiatives in communicative language-teaching methodology. Seminars will examine discourse analysis theories as well as corresponding pedagogical materials. Preparation of a practical project in discourse analysis.

Prerequisites: TESL 1F91(1F91),
2F50(250) or permission of the chairperson.

Co-requisites: TESL 4F01, 4F02, 4F03,
4F04 or permission of the chairperson.
(Does not lead to Ministry of Education qualification to teach in the province of Ontario.)

Lectures, seminar, 3 hours per week.

EDUC 4F01

Advanced English grammar

(also offered as TESL 4F01)

Application of syntactic principles outlined in TESL 2F60(260). Advanced grammatical analysis techniques applied to the teaching of short essays and research papers.

Prerequisites: TESL 1F91(191),
2F60(260) or permission of the chairperson.

Co-requisites: TESL 4F00, 4F02, 4F03,
4F04 or permission of the chairperson.

(Does not lead to Ministry of Education qualification to teach in the province of Ontario.)

Lectures, seminar, 3 hours per week.

EDUC 4F02

Individual project

(also offered as TESL 4F02)

An individually designed project, carried out through regular class meetings, with the help of a faculty adviser.

Prerequisites: TESL 1F91(191) or

permission of the chairperson.

Co-requisites: TESL 4F00, 4F01, 4F03,
4F04 or permission of the chairperson.
(Does not lead to Ministry of Education qualification to teach in the province of Ontario.)

Lectures, seminar, 3 hours per week.

EDUC 4F03

Audio lingual skills

(also offered as TESL 4F03)

Theories and methods related to the teaching of English pronunciation and listening comprehension skills. To be considered are the role of contrastive analysis, error analysis and interlanguage, as well as techniques derived from generative phonology. The comprehension-based approach to second-language teaching and the advantages and limits of the language lab will be discussed.

Prerequisite: TESL 1F91(191) or
permission of the chairperson.

Co-requisites: TESL 4F00, 4F01, 4F02,
4F04 or permission of the chairperson.
(Does not lead to Ministry of Education qualification to teach in the province of Ontario.)

Lectures, seminar, 3 hours per week.

EDUC 4F04

Curriculum design, methodology and practicum

(also offered as TESL 4F04)

An extension of introductory work in TESL 1F91(191). Examination of the theoretical and historical factors influential in the development of second language curricula since 1960. A project in second language course design during the first term. Practical application of second language teaching methods and approaches.

Micro-peer teaching sessions, observation and teaching practice in Brock's Intensive English Language program.

Prerequisites: TESL 1F91(191),
3F93(393) or permission of the chairperson.

Co-requisites: TESL 4F00, 4F01, 4F02,
4F03 or permission of the chairperson.

(Does not lead to Ministry of Education qualification to teach in the province of Ontario.)

Lectures, seminar, practice teaching, 3 hours per week.

(Pre-service courses)

Courses designated EDUC 8(*alpha*) 00 or above are for students enrolled in the BEd Route I program. 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 experiences in observing and teaching in schools integrated within college courses, counselling groups, and teaching centre activities. Students will be guided in practice teaching for ten weeks distributed throughout the college year. An essential component of this course is visits to the schools.
Required.

Lectures, seminar, practicum.

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.

Required.

Lectures, seminar, practicum.

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 human development and behavior modification. Modular approach with lecture, independent study, seminar simulations, and guided classroom observations.

Required.

Lectures, seminar, practicum.

EDUC 8P30**Primary/junior language arts and reading**

A study of the developmental sequence

of the four components of communication: listening, speaking, reading and writing; and of the objectives, structure and current approaches to the teaching of language and reading at the elementary level.

Two hours per week.

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).

Required.

Two hours per week.

EDUC 8P71**Business education - intermediate/senior**

Teaching methods and curriculum materials for business education courses--accounting, data processing, marketing and merchandising, secretarial sciences--in the high schools of Ontario.

Two hours per week.

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.

EDUC 8P73**Theatre arts - intermediate/senior**

A study of 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 post secondary level is required.

Two hours per week.

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.

EDUC 8P75**Family studies - intermediate/senior**

The content, methodologies and resources for teaching grades 7-13 in the areas of food and nutrition, clothing and textiles, management, the family and the child, housing.

Two hours per week.

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.

Two hours per week.

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 major expectation.

Two hours per week.

EDUC 8P78**German - intermediate/senior**

The techniques of teaching German in grades 9-13; 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 8P79**History and political science - intermediate/senior**

The nature of these subjects of the secondary school program. Emphasis is on development of history skills, curriculum design, analysis of subject guidelines from grade 7 to the O.A.C.

Two hours per week.

EDUC 8P80**Italian/Spanish - intermediate/senior**

The secondary school curriculum in

Education

Italian and Spanish with emphasis on methodological approaches, examination of available teaching resources and development of new materials.
Two hours per week.

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.

EDUC 8P82
Physical and health education - intermediate/senior
The philosophy of physical and health education in grades 7-13; 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.

EDUC 8P83
Science - intermediate/senior
Teaching science in secondary schools; Ministry, Board and school curriculum documents and other resources in each science area (biology, chemistry, physics, general science) and grade level (9-13) are examined.
Two hours per week.

EDUC 8P84
Visual arts - intermediate/senior
Studio activity, skills and art forms appropriate for students in grades 7-13; course planning and teaching methods for group and individual activities in the classroom.
Experience or course work in studio art is a helpful background.
Two hours per week.

EDUC 8Y04
Current trends and issues in special education
Current legislation and recent developments related to the education of exceptional students.
Required.
Lectures, seminar, practicum.

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.

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 development.
Two hours alternate weeks.

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.

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.

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.

EDUC 8Y24
Junior/intermediate art
The theoretical base for planning and instructing in grades 4-10 with emphasis on art as a discipline with studio, art

history, criticism and aesthetics.
Two hours alternate weeks.

EDUC 8Y25
Junior/intermediate music
Basic musicology for grades 4-10. No academic background in music is required.
Two hours alternate weeks.

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.

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.

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.

EDUC 8Y32
Primary/junior social and environmental studies
The how, why and what to teach in environmental studies programs in grades K-6 as directed in the Ministry's curriculum guidelines.
Two hours alternate weeks.

EDUC 8Y34
Primary/junior art
The theoretical base for 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.
Two hours alternate weeks.

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.

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.

(In-service courses)

Courses numbered 9(*alpha*)00 or above are for students in the BEd Route II program. 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.

Prerequisite: Ontario Teacher's Certificate.

Not open to students with credit in EDUC 494.

Lectures, seminar, practicum.

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 College of Education. Not open to students with credit in EDUC 470.

Open to certified teachers.

Lectures, seminar, practicum.

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.

Open to certified teachers as well as other interested qualified individuals.

Not open to students with credit in EDUC 432.

Lectures, seminar, practicum.

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.

Open to certified teachers as well as other interested qualified individuals.

Not open to students with credit in EDUC 457.

Lectures, seminar, practicum.

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.

Prerequisite: open to teachers and administrators.

Lectures, seminar, practicum.

EDUC 9F11**Teaching French as a second language part I**

Teaching French as a second language as 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. Open to certified teachers as well as other interested qualified individuals who qualify by successful completion of an oral and written test. Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F11(411) or equivalent (e.g., TFSL part I).

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F12(412) or equivalent (e.g., TFSL part II) and a transcript showing at least five credits in French at the university level (or the equivalent).

Lectures, seminar, practicum.

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.

Open to certified teachers as well as other interested qualified individuals who qualify by successful completion of an oral and written test.

Lectures, seminar, practicum.

EDUC 9F15**Music--vocal primary/junior part II**

Teaching strategies and materials

Education

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.

Prerequisite: EDUC 9F14(414) or equivalent (e.g., Music--vocal (primary/junior) part I).

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F15(415) or equivalent (e.g., Music--vocal (primary/junior) part II).

Lectures, seminar, practicum.

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.

Open to certified teachers as well as other interested qualified individuals.

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F17 or equivalent, e.g. Science education primary/junior part I

Lectures, seminar, practicum.

EDUC 9F19

Science education primary/junior part III

The study of leadership skills in the organization, administration and supervision of science education program for the primary/junior division.

Prerequisite: EDUC 9F18 or equivalent, e.g. Science education primary/junior part II.

Lectures, seminar, practicum.

EDUC 9F21

Reading part I

An introductory study of the language processes of reading and writing.

Basic assessment procedures and the improvement of reading skills.

Open to certified teachers as well as other interested qualified individuals.

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F21(421) or equivalent (e.g., Reading part I).

Lectures, seminar, practicum.

EDUC 9F23

Reading part III

Advanced instruction in the theory and practice of reading instruction; the design and implementation of reading programs.

Prerequisite: EDUC 9F22(422) or equivalent (e.g., Reading part II).

Lectures, seminar, independent study, practicum.

EDUC 9F24

Industrial arts part I

Laboratory-centered 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.

Open to certified teachers as well as other interested qualified individuals. Candidates will be required to pass the Manufacturing Area, Trade Test B.

Lectures, seminar, practicum.

EDUC 9F25

Industrial arts part II

Laboratory-centered 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.

Prerequisite: EDUC 9F24(424) or equivalent (e.g., Industrial arts part I).

Lectures, seminar, practicum.

EDUC 9F26

Industrial arts part III

Organization and curriculum development as they apply to the industrial arts program, to the school, and to the local and provincial system.

Prerequisite: EDUC 9F25(425) or equivalent (e.g., Industrial arts part II).

Lectures, seminar, practicum.

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.

Open to certified teachers as well as other interested qualified individuals.

Lectures, seminar, practicum.

EDUC 9F28

Teacher-librarianship part II

A continuation of EDUC 9F27(427). 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.

Prerequisite: EDUC 9F27(427) or equivalent (e.g. Teacher-librarianship part I).

Lectures, seminar, practicum.

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.
Prerequisite: EDUC 9F28(428) or equivalent (e.g., Teacher-librarianship part II).

Lectures, seminar, practicum.

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.

Open to certified teachers as well as other interested individuals.

Not open to students with credit in EDUC 471.

Lectures, seminar, practicum.

EDUC 9F32

Environmental science part II

A continuation of EDUC 9F31(471).

Planning programs of environmental science (outdoor education) in a K to 13 continuum with emphasis on implementation at the three divisional levels.

Prerequisite: EDUC 9F31(471) or the equivalent (e.g. Environmental science, Part I).

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F32 or the equivalent (e.g. Environmental science part II).

Lectures, seminar, practicum.

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.

Open to certified teachers as well as other interested qualified individuals.

Lectures, seminar, practicum.

EDUC 9F35

Family studies part II

A continuation of EDUC 9F34(434).

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.

Prerequisite: EDUC 9F34(434) or equivalent (e.g. Family studies part I) 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).

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F35(435) or equivalent (e.g. Family studies part II) and a minimum of five university credits from the five areas outlined in EDUC 4F35.

Lectures, seminar, practicum.

EDUC 9F37

Primary education part I

An examination of the basic teaching strategies in the various subject areas; a consideration of curriculum matters of concern to primary teachers, and the development of skills associated with a recognized system of interpersonal relationships.

Open to certified primary grade teachers.

Lectures, seminar, practicum.

EDUC 9F38

Primary education part II

An extension of EDUC 9F37(437); an overview of current principles of child development and learning; a more detailed examination of curricula, and a finer analysis of the techniques of

instruction and evaluation. An opportunity will be provided to concentrate on one specific area of the curriculum (communications, environmental studies, or arts).

Prerequisite: EDUC 9F37(437) or equivalent (e.g., Primary education part I).

Lectures, seminar, practicum.

EDUC 9F39

Primary education part III

A more intensive consideration of the teaching strategies, evaluation techniques, and curriculum concerns examined in EDUC 9F37(437) and EDUC 9F38(438); 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.

Prerequisite: EDUC 4F38(438) or equivalent (e.g., Primary education part II).

Lectures, seminar, practicum.

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.

Open to certified teachers as well as other interested qualified individuals.

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F41(441) or equivalent (e.g. Physical and health education part I).

Lectures, seminar, practicum.

Education

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.

Prerequisite: EDUC 9F42(442) or equivalent (e.g., Physical and health education part II).

Lectures, seminar, practicum.

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.

Open to certified teachers as well as other interested qualified individuals. Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F44(444) or the equivalent (e.g. Physical and health education INT/SR part I).

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F45(445) or equivalent (e.g. Physical and health education INT/SR part II).

Lectures, seminar, practicum.

EDUC 9F47

Attendance counsellor

An examination of 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 practicum; developmental psychology; law and education.

Open to potential attendance counsellor candidates, practising 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. Not open to students with credit in EDUC 482.

Lectures, seminar, practicum.

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.

Open to certified teachers as well as other interested qualified individuals.

Lectures, seminar, practicum.

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.

Prerequisites: EDUC 9F51(451) or the equivalent (e.g. Visual arts part I).

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F52(452) or the equivalent (e.g. Visual arts part II). Lectures, seminar, practicum.

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. Open to certified teachers as well as other interested qualified individuals.

Lectures, seminar, practicum.

Note: 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.

Prerequisite: EDUC 9F54(454) or equivalent (e.g. Religious education part I).

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F55(455) or the equivalent (e.g. Religious education

part II).

Lectures, seminar, practicum.

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. Open to certified junior grade teachers. Not open to students with credit in EDUC 458.

Lectures, seminar, practicum.

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).

Prerequisite: EDUC 9F57(458) or equivalent (e.g., Junior education part I).

Not open to students with credit in EDUC 459.

Lectures, seminar, practicum.

EDUC 9F59

Junior education part III

A more intensive consideration of the teaching strategies, evaluation techniques, and curricular concerns examined in EDUC 9F57(458) and 9F58(459) 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.

Prerequisite: EDUC 9F58(459) or equivalent (e.g., Junior education part II).

Not open to students with credit in EDUC 460.

Lectures, seminar, practicum.

EDUC 9F61

Computers in the classroom part I

An introduction to the micro-computer and its educational application for the classroom teacher; the architectural, historical and pedagogical aspects of micro-computers; basic computer literacy; elementary program development; students will select, review, modify, and field test educational computer courseware.

Not open to students with credit in EDUC 473hc/474hc.

Open to certified teachers as well as other interested qualified individuals.

Lectures, seminar, practicum.

EDUC 9F62

Computers in the classroom part II

A continuation of EDUC 9F61(461). 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.

Prerequisite: EDUC 9F61(461) or equivalent (e.g. Computers in the classroom part I).

24--3 hour lab sessions

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.

Prerequisite: EDUC 9F62(462) or equivalent (e.g. Computers in the classroom part II).

24--3 hour lab sessions

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.

Open to certified teachers as well as other interested qualified individuals.

Lectures, seminar, practicum.

EDUC 9F65

Guidance part II

A continuation of EDUC 9F64(464). Effective utilization of group processes; the importance of career and educational planning; counselling techniques.

Prerequisite: EDUC 9F64(464) or equivalent (e.g., Guidance part I).

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9F65(465) or equivalent (e.g., Guidance part II).

Lectures, seminar, practicum.

EDUC 9F67

English as a second language part I

An introductory 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.

Open to certified teachers as well as other interested individuals. Applicants must be able to communicate well in both written and spoken English.

Lectures, seminar, practicum.

EDUC 9F68

English as a second language part II

A continuation of EDUC 9F67(467). Further development of instructional units in ESL; the evaluation of ESL programs and learning materials.

Prerequisite: EDUC 9F67(467) or the equivalent (e.g. ESL part I).

Lectures, seminar, practicum.

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

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effective ESL programs.
Prerequisite: EDUC 9F68(468) or equivalent (e.g. ESL Part II).
Lectures, seminar, practicum.

EDUC 9F71

Cooperative education part I

An analysis of a variety of Cooperative education programs currently being used in the schools of Ontario. Students will plan, implement, supervise and evaluate a Cooperative education course at the classroom level with reference to Ministry of Education documents (OSIS--Ontario Schools Intermediate and Senior division programs).

Open to certified teachers and other interested qualified individuals.

Not open to students with credit in EDUC 472.

Lectures, seminar, practicum.

EDUC 9F72

Cooperative education part II

The development, implementation and evaluation of Cooperative 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 Cooperative education.

Prerequisite: EDUC 9F71(472).

Not open to students with credit in EDUC 475.

Lectures, seminar, practicum.

EDUC 9F73

Cooperative education part III

Organizing and leading workshops in Cooperative education; planning, coordinating and implementing Cooperative education programs (including in-school and out-of-school components) at the school and Board level.

Prerequisite: EDUC 9F72(475).

Not open to students with credit in EDUC 476.

Lectures, seminar, practicum.

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.

Open to all teachers and other interested qualified individuals.

Lecturers, seminar, practicum.

EDUC 9F75

Dramatic arts part II

A continuation of the study of the components introduced in part I. More advanced consideration of the preparation and evaluation of courses in dramatic arts.

Prerequisite: EDUC 9F74 or equivalent, e.g. Dramatic arts part I.

Lectures, seminar, practicum.

EDUC 9F76

Dramatic arts part III

Organizing and teaching workshops in dramatic arts: planning, implementing and evaluating dramatic arts programs.

Prerequisite: EDUC 9F75 or equivalent, e.g. Dramatic arts part II.

Lectures, seminar, practicum.

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.

Prerequisite: an undergraduate degree and an Ontario Teacher's Certificate.

Not open to students with credit in EDUC 9F56(458), 9F58(459), 9F59(460).

Lectures, seminar, practicum.

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.

Prerequisite: an undergraduate degree and an Ontario Teacher's Certificate.
Lectures, seminar, practicum.

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.

Prerequisite: an acceptable undergraduate degree that includes *two* credits in the teachable subject area.

Lectures, seminar, practicum.

Note: additional prerequisite for certification purposes: an Ontario Teacher's 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 department of Continuing Studies 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 College of Education during a scheduled block in winter or spring term.

Lectures, seminar, practicum.

(9M20) English

(9M21) Mathematics
 (9M22) Science
 (9M23) History
 (9M24) Geography
 (9M25) Computer science
 (9M26) Society challenge and change (Man in society).
 (9M27) Physical education
 Consult the department of Continuing Studies 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 senior level. Candidates may be asked to successfully complete three weeks of practice teaching as assigned by the College of Education during a scheduled block in winter or spring term.

Lectures, seminar, practicum.

(9M30) English
 (9M31) Mathematics
 (9M32) Science
 (9M33) History
 (9M34) Geography
 (9M35) Computer science
 (9M36) Society challenge and change (Man in society)
 (9M37) Physical education
 Consult the department of Continuing Studies 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 course; for part II, EDUC 9P02 and a second elective (either part II or another part I); for

part III, EDUC 9P03 and a third elective (see EDUC 9P04-9P13). 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. Consideration will be given to models, theories and approaches of educational exceptionalities, their classroom implications, available community resources, and effective school/student/parent communication. Open to certified teachers and other interested qualified individuals. Not open to students with credit in EDUC 417.
 Lectures, seminar, practicum.

**EDUC 9P02
 Special education, foundations II**
 Further studies of the educational implications 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. Prerequisite: EDUC 9P01(417) or equivalent (e.g. Special Education, Core I). Not open to students with credit in EDUC 418.
 Lectures, seminar, practicum.

**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.

Prerequisite: EDUC 9P02 or equivalent (e.g. Special Education, Core II). Not open to students with credit in EDUC 419.
 Lectures, seminar, practicum.

**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. Prerequisite: EDUC 9P01(417).
 Lectures, seminar, practicum.

**EDUC 9P05
 Special education, learning disabilities II (advanced)**
 A continuation of EDUC 9P04 with emphasis on theories and strategies of teaching students with speech and language disabilities; identification of this exceptionality, its subclassifications and its relationship to other exceptionalities. Prerequisite: EDUC 9P02 and 9P04.
 Lectures, seminar, practicum.

**EDUC 9P06
 Special education, teaching the trainable retarded pupil (T.R.P.) (basic)**
 The development of programs in 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 will also be discussed. Prerequisite: EDUC 9P01(417). Not open to students with credit in EDUC 496hc.
 Lectures, seminar, practicum.

**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.

Education

Prerequisite: EDUC 9P01(417) and 9P06.

Not open to students with credit in EDUC 497hc.

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9P01(417).

Lectures, seminar, practicum.

EDUC 9P09

Special education, gifted II (advanced)

A continuation of EDUC 9P08 with emphasis on theories and strategies of teaching gifted students; the identification of this exceptionality and its subclassifications and its relationship to other exceptionalities.

Prerequisite: EDUC 9P02 and 9P08.

Lectures, seminar, practicum.

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.

Prerequisite: EDUC 9P01(417).

Lectures, seminar, practicum.

EDUC 9P11

Special education, behavior II (advanced)

A continuation of EDUC 9P10 with emphasis on theories and strategies of teaching the behaviorally exceptional student; the identification of this exceptionality and its subclassifications and its relationship to other exceptionalities.

Prerequisite: EDUC 9P02 and 9P10.

Lectures, seminar, practicum.

EDUC 9P12

Special education, combined electives I (basic)

The identification of students with learning disabilities, behavioral exceptionalities and giftedness and providing appropriate programming for

them. This elective course will be offered whenever specific Special Education basic courses are not available.

Prerequisite: EDUC 9P01(417).

Lectures, seminar, practicum.

EDUC 9P13

Special education, combined electives II (advanced)

A continuation of EDUC 9P12 with emphasis on theories and strategies of teaching students with learning disabilities, behavioral exceptionalities and giftedness. This elective course will be offered whenever specific Special Education advanced courses are not available.

Prerequisite: EDUC 9P02 and 9P12.

Lectures, seminar, practicum.

EDUC 9P14

Physical exceptionalities (basic)

Basic methodologies in teaching children with physical and health-related disabilities.

Prerequisite: EDUC 9P01

Lectures, seminar, practicum.

EDUC 9P15

Physical exceptionalities (advanced)

Planning, implementing and evaluating programs for children with physical and health-related disabilities.

Prerequisite: EDUC 9P14.

Lectures, seminar, practicum.

* * *

EDUC 9P90

Special topics in education

An examination of topics selected from year to year on the basis of specific areas of instructional expertise and candidate interest.

Prerequisite: permission of the chairperson, department of Continuing Studies.

Not open to students with credit in EDUC 498hc.

Lectures and seminars, twelve 3 hour sessions.

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).

Open to teachers and administrators.

Lectures, seminars, practicum, twelve 3 hour sessions.

Note: This course carries BEd credit only.

English Language and Literature

Officers of instruction

Chairperson

J.A. Lye

A.A. Somerville (after July 1, 1988)

Professors

C.A. Abrahams

M.S. Hornyansky

Associate professors

G.H. Coggins

B. Crick

J.A. Lye

R.D. MacDonald

K.M. McKay

G.C. Reecer

I.C. Shaw

A.A. Somerville

Assistant professors

M.J. Rose

S. Slade

Part-time instructor

P.A. Green

General information

Mackenzie Chown complex A310

The department of English Language and Literature aims at fostering a critical intelligence. To this end our required core of historical period courses (2F21, 2F30, 2F40, 3F21, 3F30, 3F45, 4F10) provides a comprehensive grasp of the whole. 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 pass program and honors program.

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 (particularly Latin), philosophy.

Students are reminded that year 3 courses are restricted to those who have at least three year 2 university credits or the permission of the instructor, and are cautioned against taking a year 3 English course without having passed at least one year 2 English course.

Students in other disciplines who have not taken ENGL 1F91 may take a senior English course as an elective with permission of the instructor.

Courses at the year 4 level are normally for year 4 students; other students may be admitted by permission of the department.

Students who intend to take a three year or four year degree in English should discuss their program with a member of the department.

Historical core courses:

List A: 2F21 or 3F21, 2F40, 4F10

List B: 2F30, 3F30, 3F45

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.

Pass program

Students reading for a pass degree with a major in English are required to complete seven credits in English, including ENGL 1F91.

Of the seven, three credits must be chosen from the historical core list A and B above, two from one list and one from the other list. Three credits must be chosen from courses 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.

Normal pattern:

Year 1

ENGL 1F91; one science and one social science context credit; two elective credits. (See second language requirement.)

Year 2

Three English credits; two elective credits. (See second language requirement.)

Year 3

Three English credits; two elective credits.

Honors program

Eleven English credits are required, including:

- (i) ENGL 1F91;
- (ii) four historical core courses, two from list A and two from list B.
- (iii) one of ENGL 3F91 or 3F92;
- (iv) one credit in dramatic literature (ENGL 2F97 or DRAM 3F10 recommended);
- (v) at least two of ENGL 4F00, 4F10, 4F30, 4F99, 4M40-4M49 (ENGL 4F00 recommended);

Note: A maximum of three DRAM credits may be taken for English credit.

English Language and Literature

Normal pattern:

Years 1, 2, and 3

As in pass program.

Year 4

Four English credits, including at least two at the year 4 level (see (v) above); one elective credit.

Combined major programs

Pass program

Students wishing to study English as part of a combined major pass program are required to complete: ENGL 1F91; two historical core courses, one from list A and one from list B; two other English credits. It is expected that a student will take two credits in English at the year 2 level and two at the year 3 level. (See second language requirement.)

Honors program

Students who wish to study English as part of a combined major honors program are required to complete: ENGL 1F91; three from the historical core list A and B above, two from one list and one from the other; three other English credits. It is expected that an honors student will take two English credits at the year 2 level, two at the year 3 level and two at the year 4 level. See second 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 English and drama 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.

Second language requirement for humanities majors

English majors must meet one of the

following requirements:

- (i) a 1F90-level credit in any of the ancient or modern languages;
- (ii) two 1F00-level credits in any of the ancient or modern languages;
- (iii) in special cases, ENGL 3F92.

Students choosing option (i) or (ii) are expected to complete the language requirement by the end of year 2.

Description of courses

Abbreviations:

*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

Introduction to literature

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)

An examination of 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 analyze the logic and rhetoric of writing on a range of subjects in a variety of modes.

Not open to students with credit in ENGL 1F99(199) or LBST 1F92(192)

or 195hc.

Lectures, seminar, 3 hours per week.

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.

Not open to students with credit in ENGL(LBST) 192.

Lectures, seminar, 3 hours per week.

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.

Not open to students with credit in EXST 195 or 211.

Lectures, seminar, 3 hours per week.

ENGL 2F21

Sixteenth century literature

Prose and poetry of Tudor England with emphasis on Sidney, Spenser and Shakespeare.

Lectures, seminar, 3 hours per week.

ENGL 2F30

Romantic literature

Poetry, together with imaginative, critical, and philosophical prose, from the 1780s (Blake) to the 1830s (Carlyle).

Lectures, seminar, 4 hours per week.

ENGL 2F40

Restoration and eighteenth 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.

ENGL 2F60

Modern American literature

Study of established 20th century authors in fiction, poetry and drama, including James, Eliot, Hemingway, Faulkner, West, Steinbeck, Jarrell, Nabokov, Bellow.

Lectures, seminar, 3 hours per week.

ENGL 2F91

Canadian literature in English

Emphasis on poetry and fiction. Representative works of such writers as Haliburton, Lampman, Roberts, Leacock, Pratt, MacLennan, Birney, Layton, Laurence, and contemporary poets. Chronicles and journalistic, philosophical, and political works are examined as works of art and as patterns of Canadian experience. Lectures, seminar, 3 hours per week.

ENGL 2F97

Shakespeare

A study of the poetry and plays. Not open to students with credit in ENGL(DRAM) 397 or 296 or DRAM 3F10(310). Students may take DRAM 3F10(310) in place of ENGL 2F97. Lectures, seminar, 3 hours per week.

ENGL 2M90-2M99

English area studies

Studies in a specialized area of English literature.

ENGL 3F00

The novel

A study of major English novelists and of 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.

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. Seminar, 3 hours per week.

ENGL 3F15

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.

ENGL 3F21

Milton and the seventeenth 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.

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.

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.

ENGL 3F45

20th century literature

Major developments in the poetry and prose of Britain and America in the 20th century. Lectures, seminar, 3 hours per week.

ENGL 3F50

The modern novel

English and American novelists from James and Hardy to the present. Lectures, seminar, 3 hours per week.

ENGL 3F60

American literature to World War I

A study of American writing from the Puritan period to the major authors of the Romantic period (Irving, Cooper) and of the mid-19th century (Emerson, Thoreau, Hawthorne, Melville, Poe, Whitman, Dickinson); precursors of the modern period (Crane, Clemens, James) are also studied. Lectures, seminar, 3 hours per week.

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 carefully 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.

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*. Seminar, 4 hours per week.

ENGL 4F00

Literary criticism

History, principles and practice of literary criticism. The examination of major critics from Aristotle to the Leavisites, and of recent developments. Seminar, 3 hours per week.

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. Seminar, 4 hours per week.

ENGL 4F30

19th century thought

Writings in social criticism, aesthetics, education, science, and philosophy, from Burke to Wilde. Seminar, 3 hours per week.

ENGL 4F99

Senior research tutorial

Tutorial combined with individual research 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.

English Language and Literature

ENGL 4M40-4M49

Major writers

1988-89: (4M41)

Three Romantic poets: Wordsworth,
Keats, Wallace Stevens.

Seminar, 3 hours per week.

Drama courses available for English credit

*DRAM 1F93

Introduction to drama

*DRAM 2F95

The comic spirit

*DRAM 2F97

Canadian drama

DRAM 2F98

The tragic vision

*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 Fine Arts.

Environmental Science

Director

F. Berkes

B. Krushelnicki

(after July 1, 1988)

General information

Mackenzie Chown complex F202

The environmental science program at Brock is administered by the Institute of Urban and Environmental Studies (UEST). See also that section of the calendar. The program, which offers a pass or an honors BSc degree 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 and systems-oriented approach of environmental studies.

Students may elect to take the co-operative studies option which provides opportunity for on-the-job training and practical experience for degree credit. Full time students who have completed year 2 are eligible for the program; enrolments will be limited. See details under the UEST calendar entry.

Combined major programs leading to a BSc degree are also available with biological sciences/urban and environmental studies, chemistry/urban and environmental studies, geography/urban and environmental studies, geological sciences/urban and environmental studies.

The recommended course selection for an environmental science program is

outlined below.

Pass program

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

Year 1

UEST 1F90; BIOL 1F90; CHEM 1F93 or 1F85; COSC 1P90; MATH 1P98; one social science or humanities context credit.

Year 2

BIOL 2F03; one credit from BIOL 2F01, 2P90, 2P93, 2P98; CHEM 2P40/2P41; COSC 1P91; MATH 1P97; the context credit not taken in year 1.

Year 3

UEST 2F97; one of UEST 3V20-3V25 or 3V30-3V35; one of UEST 3P41, 3P42, 3P53, 3P55 or 3V10-3V15; one credit in biology numbered 2(*alpha*)90 or above; one credit in chemistry chosen in discussion with that department; one elective credit (GEOL 1F95 or PHYS 1F20 or GEOG 1F91 recommended).

Honors program

Years 1, 2 and 3

As in the pass program

Year 4

UEST 4F95; one of UEST 3P41, 3P42, 3P53, 3P55 or 3V10-3V15; one of UEST 3V20-3V25 or 3V30-3V35; one of CHEM 4F90/4F91 or BIOL 4F92 and one year 3 or year 4 biology credit; one elective credit.

Extrdepartmental Studies

Director

C. Abrahams, Dean
Division of Humanities

General information

Schmon tower 401D

Students' programs can 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.

Description of courses

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

EXST 1F50

Aspects of human sexuality

Studies in the biological, psychological and cultural aspects of human sexuality.

Not open to students with credit in EXST 290.

Lectures, seminar, 3 hours per week.

EXST 1F92

Women's studies

An analysis of the role of women in societies as manifested in customs, literature, and historic roles. An attempt will be made to develop a theoretical framework to evaluate critically the existing situation.

Lectures, seminar, 3 hours per week.

EXST 2F20

Comparative religion

Studies in the world's major religions, their founders, teachings, scriptures and development, with readings from primary sources.

Not open to students with credit in REST 190 or 220.

Lectures, seminar, 3 hours per week.

EXST 2F95

Introduction to speech-language pathology and audiology

The development and disorders of human communication: normal speech, language and hearing development, and clinical disorders from the newborn to the aged. Approaches to assessment and remediation. Topics include articulation, language, voice, adult language disorders, fluency and stuttering, neurological and auditory disorders. This course is of interest to students in education, behavioral and social sciences, health professionals, and students intending to pursue subsequent professional training in speech pathology or audiology. Enrolment may have to be limited (by grade standing) due to space limitations.

Prerequisite: PSYC 1F90(190) or permission of the instructor.

Fine Arts

Officers of instruction

Chairperson

J.C.M. Leach

M.J. Miller (after July 1, 1988)

Professors

J.C.M. Leach, (film studies, dramatic literature)

M.J. Miller (dramatic literature)

R. Tremain (music)

M. Yacowar (film studies)

Associate professors

P. Feldman (theatre)

B.K. Grant (film studies)

R.C. Nunn (dramatic literature)

Assistant professors

M. Burke (theatre in education)

J. Glofcheskie (music)

W. Hartman (theatre)

D. Knight (art history)

M. Kropf (studio art)

H. Loewen (music)

G. McQueen-Fuentes (theatre)

M. Morrissey-Clayton (studio art)

J. Nicks (film studies)

R. Pritchard (music)

M. Widner (music)

Part time instructors

G. Ducornet (studio art)

S. Osterbind (art history)

A. Titley (technical theatre)

Resident company, *Theatre Beyond Words*

P. Hallich

T Judd

H. Maskow

R. Patterson

C. Schott

Technical director

A. Palmieri

Wardrobe co-ordinator

D. Crosby

General information

Thistle west 135

At Brock the study of fine arts is concerned with the nature, function, and history of the arts as a means of human expression, 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 Fine Arts offers pass, honors, single and combined major programs in five fields of study: dramatic literature, film, music, theatre, and visual arts. These five majors represent the student's choice of concentration within the department. Single pass and honors programs are also offered in fine arts studies.

CANA 1F91: Introduction to Canadian studies, and CANA 2F91: Canadian culture and society: interdisciplinary studies, are recommended electives for fine arts students.

Facilities

The film program uses *The Studio*, Brock Centre for the Arts, which is a fully equipped film screening space. In addition, a film and video study room is available for use by senior students.

Facilities in the music program include a Boesendorfer concert grand piano, Steinway and Heintzman grand pianos, a Dowd two-manual harpsichord, a Casavant continuo organ, set of percussion instruments and a set of Renaissance wind and brass instruments.

Practice rooms are available for students studying performance and keyboard skills.

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*, *The Space* and the outdoor amphitheatre. Scenery, properties and construction workrooms are part of the Centre for the Arts complex. A sound booth fully equipped for recording and playback is also available for student use.

Visual arts facilities include an extensive slide collection and a fully equipped art studio.

Extracurricular activities

The department presents and sponsors music concerts, theatre productions, film series, exhibitions, public lectures, and an annual spring festival. The university regularly hosts mime performances and workshops by its resident company, the internationally acclaimed *Theatre Beyond Words*.

In addition, Brock's very active Fine Arts Committee arranges for a variety of visiting artists and events, and a program of art exhibitions.

Core and context

The following departmental offerings may be taken for core and context credit by science and social science majors:

DRAM 1F93	Introduction to drama
FILM 1F94	Introduction to film criticism
MUSI 1F00	Music in popular culture
MUSI 1F10	Introduction to music
MUSI 1F50	History and literature of music from medieval to modern times
VISA 1F90	Introduction to the history of art

Fine Arts

Fine arts and education

The department offers the following courses for teachers or those planning to become teachers:

FILM 2F04	Screen education
MUSI 2F74	Music in the classroom I
MUSI 2F95	Choral technique and literature: children's and youth choirs
MUSI 2F96	Choral technique and literature: adult choirs
MUSI 3F74	Music in the classroom II
THEA 2F10	Drama in education I
THEA 3F09	Drama in education II
THEA 3F11	Theatre in education
THEA 4P11	Creative movement and classroom drama

Fine arts studies

Pass program

These programs are designed for students who wish to gain a broad exposure to the fine arts rather than to major in one of the department's five streams (see separate listings below). Students are required to discuss their program with the department chairperson.

Eight credits are required: two of DRAM 1F93, FILM 1F94, MUSI 1F00, MUSI 1F10, VISA 1F90, six other credits from at least two streams in the Fine Arts department (DRAM, FILM, MUSI, THEA, VISA).

Honors program

Twelve credits are required: two of DRAM 1F93, FILM 1F94, MUSI 1F00, MUSI 1F10, VISA 1F90; one of DRAM 4F90, FILM 4F90, MUSI 4F50, VISA 3F95; nine other credits from at least two streams in the Fine Arts department (DRAM, FILM, MUSI, THEA, VISA).

Note: combined pass and honors programs are not available with FINA as one area of concentration.

Year 3 courses are normally restricted to students with at least three second year credits or special permission of the instructor.

Second language requirement for humanities majors

Fine Arts majors are required to complete one 1F90 level or two 1F00 level credits in a language other than English. It is recommended that students fulfill this requirement by year 2.

Description of courses

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

FINA 2F16

Introduction to theatre administration

Practical problems in the operation of a professional theatre, dance or music company in Canada. Topics will include basic administration and bookkeeping, 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, seminars, 3 hours per week.

FINA 2F98

Approaches to dance: techniques and criticism

Studio course in classical and contemporary dance, with an introduction to technique, theory, history and the critical appreciation of the dance. Not open to students with credit in FINA 198.

Lectures, studio, seminars, 3 hours per week.

FINA 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. This course will not be offered in 1988/89.

FINA 3F90

Fine arts studies abroad

Faculty-conducted tour of theatre, film and art activities in a major centre abroad. The course will comprise one month of preparatory classes at Brock and four weeks abroad. A fee will be charged to cover expenses.

This course will not be offered in 1988/89.

FINA 3P82

Psychology of the arts

(also offered as PSYC/3P82)

An examination of 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.

Prerequisite: PSYC 1F90 and third year standing, or permission of the instructor.

Lectures, seminar, 3 hours per week.

FINA 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 chairperson before registration.)

Dramatic literature

The dramatic literature program offers an interlocking series of courses, the primary aims of which are to assist the student to develop a critical awareness of drama both as text and as performance, and to enable a student to recreate the play imaginatively from a study of the text itself and from the context of its conventions, traditions and current stage history.

Pass program

Eight credits are required: ENGL 1F91, DRAM 1F93, three of DRAM 2F95, 2F97, 2F98, 3F10, 3F93; three additional fine arts credits.

Honors program

Twelve credits are required: ENGL 1F91, DRAM 1F93, 2F95, 2F97, 2F98, 3F10, 3F93, 4F90; four more fine arts credits.

Combined pass and honors programs

A pass program must include DRAM 1F93 and four of DRAM 2F95, 2F97, 2F98, 3F10, 3F93. An honors program must include *all* of the above and DRAM 4F90.

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 3P03 are recommended electives.

Year 3 courses are normally restricted to students with at least three second year credits or special permission of the instructor.

Second language requirement for humanities majors

Students in the dramatic literature stream are required to complete FREN 1F80 or 1F90. It is recommended that students fulfill this requirement by year 2.

Description of courses

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

Abbreviations:

*DRAM Dramatic literature courses that may be taken for credit in English.

*DRAM 1F93

Introduction to drama

A study of dramatic works ranging from ritual drama to contemporary plays, with emphasis on plays illustrating the major dramatic genres and conventions operative in the theatre in each phase of its development. Lectures, seminar, 3 hours per week.

*DRAM 2F95

The comic spirit

A critical study of comedy and related dramatic forms (e.g. farce). Major comedies will be analyzed 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. Prerequisite: DRAM 1F93(193) or permission of the instructor. Lectures, seminar, 4 hours per week.

*DRAM 2F97

Canadian drama

An examination of the Canadian experience as expressed by Canada's playwrights on stage, radio and television, using both English plays and French plays in translation. Not open to students with credit in DRAM 291hc. Lectures, seminar, 4 hours per week.

*DRAM 2F98

The tragic vision

A critical study of tragedy and related dramatic forms (e.g. melodrama and tragicomedy). Major tragedies will be analyzed in their theatrical and social contexts and in relation to the development of the idea of tragedy. Prerequisite: DRAM 1F93(193) or permission of the instructor. Not open to students with credit in DRAM 315. Lectures, seminar, 4 hours per week. This course will not be offered in 1988/89.

DRAM 2M90-2M99

Special studies in drama

Studies in a specialized area of drama. Topics to be announced by the department. Prerequisite: DRAM 1F93(193) or permission of the instructor. Lectures, seminar, 3 hours per week. This course will not be offered in 1988/89.

DRAM 2P91

Canadian radio and television drama

A study of Canadian radio and television drama from 1952 to the present. The emphasis will be on the changing aesthetics of radio and television drama in Canada and its distinctive qualities. Not open to students with credit in DRAM 2F97(297). Lectures, seminar, 4 hours per week.

*DRAM 3F10

Shakespeare

A critical study of Shakespeare's works in their literary and theatrical context. Available for credit as ENGL 2F97. Not open to students with credit in

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DRAM 296, DRAM 397, ENGL 296, ENGL 2F97(297).

Lectures, seminar, 4 hours per week; additional workshop time as required. This course will not be offered in 1988/89.

*DRAM 3F93

Twentieth century drama

Study of the major dramatic and theatrical movements of the period, with special attention to expressionism and theatricalism, the drama and theories of Brecht and Artaud, the absurdists and contemporary dramatists.

Prerequisite: DRAM 1F93(193) or permission of the instructor.

Lectures, seminar, 4 hours per week.

DRAM 3F99

Special honors tutorial

Advanced study in an area of mutual interest to the student and the instructor.

A written proposal *must* be approved by the chairperson before registration.

DRAM 4F90

Critical theory and practice

(also offered as FILM 4F90 and THEA 4F90)

An advanced study of critical theory and its application to theatre, dramatic literature, film, and popular culture. Students will be expected to produce a major piece of research.

Prerequisite: year 4 honors standing or permission of the instructor.

Not open to students with credit in DRAM/FILM 402.

Seminar, 3 hours per week.

DRAM 4F99

Honors thesis

A critical or historical project in dramatic literature 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 chairperson before registration.

Film studies

The film program is a sequence of critical and historical courses which examines a variety of critical approaches to film. The courses explore the nature of film language and seek to develop a critical perspective on film as an art and a medium. Courses are also offered which explore a variety of issues and theories in mass media.

Pass program

Eight credits are required: FILM 1F94, 2F54, 2F93, 2F94, 3F24; FILM 3F95 or 3F96; two of DRAM 1F93, FILM 2F04, 2F24, 2M90-2M99, 3F05, 3F25, 3F27, VISA 1F90, 1F95, 2F20.

Honors program

Twelve credits are required: FILM 1F94, 2F24, 2F54, 2F93, 2F94, 3F24, 3F95, 3F96, 4F90; three of DRAM 1F93, 2F97, FILM 2F04, 2M90-2M99, 3F05, 3F25, 3F27, 3F92, 3F93, VISA 1F90, 1F95, 2F20, 2F50.

Combined pass program

Five credits are required: FILM 1F94; FILM 2F93 or 2F94; three of FILM 2F04, 2F24, 2F54, 2F93, 2F94, 2M90-2M99, 3F05, 3F24, 3F25, 3F27, 3F95, 3F96.

Combined honors program

Eight credits are required: FILM 1F94; FILM 2F93 or 2F94; FILM 3F24, 4F90; four of FILM 2F04, 2F24, 2F54, 2F93, 2F94, 2M90-2M99, 3F05, 3F25, 3F27, 3F92, 3F93, 3F95, 3F96.

Notes:

1. Students should consult with the department for recommended electives.

2. Year 3 courses are normally restricted to students with at least three second year credits or special permis-

sion of the instructor.

Second language requirement for humanities major

Students in the film stream are required to complete FREN 1F80 or 1F90. It is recommended that students fulfill this requirement by year 2.

Description of courses

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

FILM 1F94

Introduction to film criticism

The history of film and principles of criticism from the early silents to the modern experimental.

Not open to students with credit in DRAM 194.

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).

Not open to students with credit in DRAM 204.

Lectures and films, 3 hours per week.

This course will not be offered in 1988/89.

FILM 2F24

Canadian popular culture

(also offered as COMM 2F24)

A critical survey of the mass 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.
Not open to students with credit in
DRAM 224.
Lectures, seminar, 4 hours per week.

FILM 2F54

The documentary film

(also offered as COMM 2F54 and
SOCI 2F54)

An examination of the documentary
film from its beginnings in photogra-
phy and the actualités of the Lumières
through cinema verité and ethno-
graphic cinema. The history, theory
and aesthetics of documentary film and
its relationship to the culture it docu-
ments.

Prerequisite: FILM 1F94(194) or SOCI
1F90(190) or COMM 1F90(190) or
permission of the instructor.

Lectures, seminar, 3 hours per week;
plus weekly film lab.

FILM 2F93

National cinema

Intensive study of a major national
cinema with emphasis on its relation-
ship to national cultural traditions.

Prerequisite: FILM 1F94(194) or
permission of the instructor.

Lectures, seminar, 3 hours per week;
plus weekly film lab.

FILM 2F94

The director's cinema

Study of the technique, thought, and
development of selected directors.

Prerequisite: FILM 1F94(194) or
permission of the instructor.

Not open to students with credit in
DRAM 284/294.

Lectures, seminar, 3 hours per week;
plus weekly film lab.

This course will not be offered in 1988/
89.

FILM 2M90-2M99

Special studies in film

Studies in a specialized area of film.
Topics to be announced by the depart-
ment.

Prerequisite: FILM 1F94(194) or
permission of the instructor.

Lectures, seminar, 3 hours per week.

This course will not be offered in 1988/
89.

FILM 3F05

Theory and criticism of television
(also offered as COMM 3F05)

A critical study of the aesthetics of
television. Historical and international
perspectives and alternative practices
will be considered.

Prerequisite: COMM 1F90(190) or
FILM 1F94(194) or permission of the
instructor.

Lectures, seminar, 3 hours per week,
plus weekly lab.

FILM 3F24

Canadian cinema

(also offered as COMM 3F24)

A critical history of the Canadian
cinema and a study of the work of
major directors.

Prerequisite: FILM 1F94(194) or
DRAM 2F97(297) or permission of the
instructor.

Not open to students with credit in
DRAM 324.

Lectures, seminar, 3 hours per week
plus weekly film lab.

This course will not be offered in 1988/
89.

FILM 3F25

Advanced studies in popular culture

Specialized studies in popular culture.
Analysis of a selected genre as devel-
oped in different media or of the role of
different media in a specific social or
historical context.

Prerequisite: FILM 1F94(194) or
2F24(224) or permission of the
instructor.

Lectures, seminar, 4 hours per week.

This course will not be offered in 1988/
89.

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.

Prerequisite: 2 film courses or permis-
sion of the instructor.

Students seeking permission of the
instructor should contact the depart-
ment prior to registration. Enrolment
will be limited to 15.

Not open to students with credit in

FILM(COMM) 394 or COMM 327.
Workshops, seminar, 3 hours per week;
additional production time as required.

FILM 3F92

The director's cinema II

Further study of the technique, thought
and development of selected directors.
Students will be expected to produce a
major piece of research.

Prerequisite: FILM 2F94(294).

Lectures, seminar, 3 hours per week;
plus weekly film lab.

This course will not be offered in 1988/
89.

FILM 3F93

National cinema II

Further study of a major national
cinema. Students will be expected to
produce a major piece of research.

Prerequisite: FILM 2F93(293).

Lectures, seminar, 3 hours per week;
plus weekly film lab.

FILM 3F95

Film theory and the avant-garde

A study of the major issues of film
theory as developed in the work of
theorists (e.g., Eisenstein, Bazin, Metz)
and as practised in the work of *avant
garde* filmmakers.

Prerequisite: FILM 1F94(194) and one
of FILM 2F54(254), 2F93(293),
2F94(294) or 3F24(324).

Not open to students with credit in
FILM 396 taken prior to 1985.

Lectures, seminar, 3 hours per week
plus film lab.

FILM 3F96

The silent cinema

A critical study of major films and
filmmakers of the silent period in their
historical and theoretical contexts.

Prerequisite: FILM 1F94(194) and one
of FILM 2F54(254), 2F93(293),
2F94(294) or 3F24(324).

Lectures, seminar, 3 hours per week;
plus weekly film lab.

This course will not be offered in 1988/
89.

FILM 3F99

Special honors tutorial

Advanced study in an area of mutual
interest to the student and the instruc-

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tor.

A written proposal *must* be approved by the chairperson before registration.

FILM 4F90

Critical theory and practice
(also offered as DRAM 4F90 and THEA 4F90)

An advanced study of critical theory and its application to theatre, dramatic literature, film, and popular culture. Students will be expected to produce a major piece of research.

Not open to students with credit in DRAM/FILM 402.

Prerequisite: year 4 honors standing or permission of the instructor.

Seminar, 3 hours per week.

FILM 4F99

Honors thesis

A critical, historical or creative project in film 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 chairperson before registration.

Music

The music program offers an all-round training in the musical disciplines, with courses in music history and literature, theory and composition, performance and pedagogy. Basic musicianship (sight-singing, keyboard, aural and written skills) is emphasized in the first two years of study. At the end of their second year, all students are required to attend an interview with a member of the music faculty to discuss their individual goals and to ensure a clear direction in their further course of study.

Prospective majors should possess a level of musical literacy equivalent to Royal Conservatory Grade II rudiments or MUSI 1F10. Students lacking this basic level must take MUSI 1F10 in their first year of study. (MUSI 1F10 is a degree credit; however it may not be used to meet the departmental requirements for a single or combined major in music.) It is recommended that all

prospective majors arrange an interview with a member of the music faculty upon application to Brock University in order to discuss their goals and interests in relation to the Brock music program.

Solo performance is an elective in the music program. Students interested in solo performance (MUSI 1F92/2F92/3F92/4F92) should audition before June 30 of each academic year.

Audition is required of all prospective performance students not currently registered in a solo performance course at Brock. The minimum standard for admittance into MUSI 1F92 is Royal Conservatory Grade VIII or its equivalent for piano, organ, voice or classical guitar, and Royal Conservatory Grade VI for concert band or orchestral instruments. Details concerning interviews and auditions can be obtained from the department secretary. Performance students who request an approved non-resident instructor should be prepared to cover additional travel and instruction fees. Part-time students studying solo performance are required to enrol concurrently in at least one other full course in music as well as in choral ensemble.

Choral ensemble (MUSI 1P83, 2P83, 3P83, 4P83) is required of all majors and combined majors in music as well as of part-time students enrolled in solo performance courses. Music majors who have completed MUSI 1P83 and MUSI 2P83 may fulfill the third and fourth year choral ensemble requirement on a credit or non-credit basis. Choral ensemble is 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 meets the minimum prerequisite.

Music majors may take five and one half credits in year 1 without further approval from the dean.

Pass program

Eight music credits are required:

Year 1

MUSI 1F50, 1F90, 1P83; one social science and one science context credit; one 1F90 level course in a language other than English. Students without the prerequisite for a 1F90 level language course are required to take two 1F00 level language courses in their program. It is recommended that students fulfill the language requirement by the end of year 2.

Year 2

MUSI 2F50, 2F90, 2P83; two elective credits.

Year 3

MUSI 3F50, MUSI 3F91; one music credit; two elective credits.

Honors program

Twelve music credits are required:

Years 1, 2 and 3

As in pass program.

Year 4

Two of MUSI 3F74, 4F20, 4F50, 4F85, 4F90, 4F92 or 4F99; two music credits; one elective credit.

Note: at least three credits numbered 3(alpha)90 or above must be included in all honors programs.

Combined major programs

Pass

Students wishing to take music as one of two majors must take: MUSI 1F50, 1F90, 1P83, 2F90, 2P83; MUSI 2F50 or 3F50; one music elective credit.

Honors

Years 1, 2 and 3

As in pass program.

Year 4

Two of MUSI 3F74, 3F91, 4F20, 4F50, 4F85, 4F90, 4F92 or 4F99.

Note: at least three credits numbered 3(alpha)90 or above must be included in all honors programs.

Year 3 courses are normally restricted to students with at least three second year credits or special permission of the instructor.

Second language requirement for humanities majors

Students in the music stream are required to complete one 1F90-level course or two 1F00-level courses language other than English. It is recommended that students fulfill this requirement by year 2.

Description of courses

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 jazz, rhythm and blues, rock, and contemporary popular music.

Not open to music majors for music credit.

Lectures, seminar, 3 hours per week; listening assignments.

MUSI 1F10
Introduction to music

A course in basic musical literacy in which students will be introduced to the theoretical and historical aspects of art music. The emphasis will be on the development of written skills and the examination of musical forms and styles.

Not open to music majors for music credit or to those who have credit in MUSI 1F90(190).

Not open to students who have Royal Conservatory Grade II rudiments or equivalent.

Lectures, seminar, 3 hours per week.

MUSI 1F50
History and literature of music from medieval to modern times

An historical survey of styles in western art music; analysis of representative works from all periods.

Prerequisite: a level of musical literacy equivalent to MUSI 1F10(110) or

Royal Conservatory Grade II rudiments, or permission of the instructor. Lectures, 3 hours per week.

MUSI 1F90
Materials of music I

An integrated theoretical and practical study of modal and tonal melody and counterpoint, rhythm and metre, and basic forms. Development of sight-singing, keyboard, aural and written skills.

Prerequisite: a level of musical literacy equivalent to MUSI 1F10(110) or Royal Conservatory Grade II rudiments or permission of the instructor.

Lectures, sight-singing seminar, keyboard tutorial, 5 hours per week.

MUSI 1F92
Solo performance I

Individual instruction in one of the following: piano, harpsichord, organ, voice, classical guitar, or any approved concert band and orchestral instrument.

Lesson fee: \$125.00

Prerequisite: all prospective students should audition before June 30 of each academic year.

The minimum entrance standard is Royal Conservatory Grade VIII or equivalent for piano, organ, voice and classical guitar, and Royal Conservatory Grade VI for concert band and orchestral instruments. Details of interviews and auditions can be obtained from the department secretary.

One hour private instruction per week, performance classes, and compulsory participation in student recitals and an approved small or large ensemble.

MUSI 1P83
Choral ensemble I

The study of selected choral literature through rehearsal and performance; development of sight-singing and ensemble skills. Participation in one of the following three groups, determined by audition: 1) university chorus; 2) chorale; 3) chamber choir. Non-credit participants will be required to pay a \$15.00 deposit for scores.

Prerequisite: entrance by audition: basic sight-singing skills strongly

recommended.

Rehearsals, concerts, 2 hours per week for 2 terms. Extra rehearsal time as required.

MUSI 2F40
Electro-acoustic music

This course will provide a working knowledge of electronic and tape techniques in the field of art music. Topics covered will include basic recording skills, tape editing, mixing, *musique concrete*, additive synthesis, and voltage-control and parametric design using analog and basic digital synthesis. Students will compose a variety of works aimed at developing their abilities and confidence in the studio. A lab fee of \$45.00 is charged. Limited enrolment.

Prerequisite: permission of the instructor.

Not open to auditors.

Lectures, seminar, 3 hours per week; additional studio time.

MUSI 2F50
History and literature of music: baroque and classical periods

Intensive study of styles, forms and genres from c. 1600 to c. 1800 through analysis of selected works.

Prerequisite: MUSI 1F50(150) and 1F90(190) or permission of the instructor.

Not open to students with credit in MUSI 251hc/252hc.

Lectures, seminar, 3 hours per week.

MUSI 2F74
Music in the classroom I

Introduction to the philosophical and pedagogical basis of the Kodaly approach to music education and its practical adaptation to Canadian schools. Study of the systematic development of musicianship in children from kindergarten through grade four. Topics include: curriculum and lesson planning; study of song material; folksong analysis; solfege. Prerequisite: a level of musical literacy equivalent to MUSI 1F10(110) or Royal Conservatory Grade II rudiments, and permission of the instructor. Lectures, seminar, 3 hours per week;

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field assignments as required.
This course will not be offered in 1988/89.

MUSI 2F90

Materials of music II

An integrated theoretical and practical study of tonal and chromatic melody, harmony and counterpoint, rhythm, texture, and larger forms. Further development of sight-singing, keyboard, aural and written skills. Analysis and writing in period styles. Project in composition.

Prerequisite: MUSI 1F90(190) or permission of the instructor.
Lectures, sight-singing seminar, keyboard tutorial, 5 hours per week.

MUSI 2F92

Solo performance II

A continuation of individual instrumental or vocal study.
Lesson fee: \$125.00
Prerequisite: MUSI 1F92(192) or its equivalent by audition.
One hour private instruction per week, performance classes, compulsory participation in student recitals and an approved small or large ensemble.

MUSI 2F95

Choral technique and literature: children's and youth choirs

The study and practice of conducting, vocal ensemble skills and repertoire for children's and youth choirs. Topics include: conducting patterns and techniques, vocal development and the changing voice, unison and part-singing, repertoire selection and score analysis.

Prerequisite: a level of musical literacy equivalent to MUSI 1F10(110) or Royal Conservatory Grade II rudiments, and permission of the instructor.
Lectures, seminar, 3 hours per week; field assignments as required.
This course will not be offered in 1988/89.

MUSI 2F96

Choral technique and literature: adult choirs

The study and practice of conducting, vocal ensemble techniques and repertoire for adult choirs. Topics include: conducting techniques and score reading, vocal production and

classification, audition and rehearsal procedures, style and interpretation, repertoire (sources, selection and analysis).

Prerequisite: a level of musical literacy equivalent to MUSI 1F10(110) or Royal Conservatory Grade II rudiments, and permission of the instructor.
Lectures, seminar, 3 hours per week; field assignments as required.

MUSI 2M90-2M99

Special topics

A selected topic in music literature involving an historical, musicological, and analytic investigation.
Lectures, seminar, 3 hours per week.
This course will not be offered in 1988/89.

MUSI 2P83

Choral ensemble II

The study of selected choral literature through rehearsal and performance; further development of sight-singing and ensemble skills. Participation in one of the following three groups, determined by audition: 1) university chorus; 2) chorale; 3) chamber choir.
Non-credit participants will be required to pay a \$15.00 deposit for scores.
Prerequisite: MUSI 1P83(183hc), or equivalent, and sight-singing skills.
Entrance by audition.
Not open to students with credit in MUSI 282.
Rehearsals, concerts, 2 hours per week for 2 terms. Extra rehearsal time as required.

MUSI 3F20

Piano pedagogy and literature I

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.) a chronological survey of classical and romantic keyboard literature involving listening assignments, analysis of scores, and comparison of editions.

Prerequisite: minimum Royal Conservatory Grade VIII practical, MUSI 1F50(150), 1F90(190) or equivalents, and permission of the instructor.
Lectures, seminar, 4 hours per week.
Practice teaching as required.

This course will not be offered in 1988/89.

MUSI 3F50

History and literature of music: Romantic period and the 20th century

Intensive study of styles, forms and genres from c. 1800 to the present through analysis of selected works.
Prerequisite: MUSI 2F50(250) and 2F90(290) or permission of the instructor.

Not open to students with credit in MUSI 351hc/352hc.
Lectures, seminar, 3 hours per week.

MUSI 3F55

Contemporary music in Europe, the U.S.A. and Canada since 1945

Principle trends, works and composers since 1945 in Europe, the U.S.A. and Canada.

Prerequisite: permission of the department.

Not open to students with credit in MUSI 353hc/354hc.

Lectures, seminar, 3 hours per week.
This course will not be offered in 1988/89.

MUSI 3F70

Orchestration and choral arranging

A detailed study of the characteristics of orchestral instruments, used both singly and in combination, and of the voice in choral music. Score analysis, and the arranging of music for solo instruments, and for instrumental and vocal ensembles. Project in composition. Further development of sight-singing and aural skills.

Prerequisite: MUSI 2F90(290) or permission of the instructor.

Not open to students with credit in MUSI 370 taken prior to 1985.

Lectures, seminar, 4 hours per week.

MUSI 3F74

Music in the classroom II

Further exploration of the Kodaly approach to music education in a Canadian context, with the aim of increasing knowledge and understanding of art music in children. Study of the systematic development of musical literacy in children from grades five through eight. Topics include: curriculum and lesson planning; study of a

wider range of musical material; folksong analysis; solfege.
Prerequisite: MUSI 2F74(274) and permission of the instructor.
Lectures, seminar, 3 hours per week; field assignments as required.
This course will not be offered in 1988/89.

MUSI 3F85

Composition I

An introduction to composition with an emphasis on 20th century techniques of melody, harmony, rhythm and form. Writing for solo voice and small instrumental ensembles; analysis.
Prerequisite: MUSI 2F90(290) and permission of the instructor.
A portfolio of compositions must be submitted in advance.
Co-requisite: MUSI 3F70(370).
Individual tutorial each week.

MUSI 3F91

Materials of music III

A detailed study of twentieth century techniques of composition, materials, formal procedures, media and textures, based on representative works by major composers from c.1900 to the present. Analysis and imitative writing. Further work in aural training and sight-singing. Project in composition.
Prerequisite: MUSI 2F90(290)
Lectures, seminar, 4 hours per week.

MUSI 3F92

Solo performance III

A continuation of individual instrumental or vocal study.
Lesson fee: \$125.00.
Prerequisite: MUSI 2F92(292) with a minimum of B standing or its equivalent by audition.
One hour of private instruction per week; compulsory participation in performance classes, one solo or joint public recital, and an approved small or large ensemble.

MUSI 3F99

Special honors tutorial

Advanced study of an independent nature in an area of mutual interest to the student and the instructor.
A written proposal *must* be approved

by the chairperson before registration.

MUSI 3P83

Choral ensemble III

The study of selected choral literature through rehearsal and performance; further development of sight-singing and ensemble skills; leading of ensemble warm-ups. Participation in one of the following three groups, determined by audition: 1) university chorus; 2) chorale; 3) chamber choir. Non-credit participants will be required to pay a \$15.00 deposit for scores.
Prerequisite: MUSI 2P83(283hc), or equivalent, and sight-singing skills. Previous or concurrent enrolment in MUSI 2F95 or 2F96 is recommended. Entrance by audition.
Rehearsals, concerts, 2 hours per week for 2 terms. Extra rehearsal time as required.

MUSI 4F20

Piano pedagogy and literature II

A continuation of piano pedagogy I, including: 1) an examination of piano pedagogy techniques and teaching repertoire, stressing the intermediate to advanced levels of instruction; and 2) a study of the keyboard music of the baroque period and the 20th century.
Prerequisite: MUSI 3F20(320) or permission of the instructor.
Lectures, seminar, 4 hours per week.
Practice teaching as required.

MUSI 4F50

History and literature of music: Medieval and Renaissance periods
Intensive study of the development of styles, forms and genres in music from the beginnings of polyphony to c. 1600; analysis of selected works.
Prerequisite: MUSI 1F50(150) and permission of the instructor.
Not open to students with credit in MUSI 451hc/452hc.
Lectures, seminar, 3 hours per week.

MUSI 4F85

Composition II

Development of writing skills in larger forms for instrumental ensembles. Text setting for solo voice and choral mediums; analysis.

Prerequisite: MUSI 3F85(385) and permission of the instructor.
Individual tutorial each week.

MUSIC 4F90

Materials of music IV

An intensive study, through analysis and writing, of contrapuntal procedures and techniques in liturgical and secular music of the late Renaissance and Baroque periods. Detailed examination of the major forms; contrapuntal writing based directly on compositional practice. Further work in aural training and sight-singing.
Prerequisite: MUSI 3F91 or permission of the instructor.
Not open to students with credit in MUSI 390.
Lectures, seminar, 4 hours per week.

MUSI 4F92

Solo performance IV

A continuation of individual instrumental or vocal study.
Lesson fee: \$125.00.
Prerequisite: MUSI 3F92(392) with a minimum of B standing; by audition.
One hour private instruction per week; compulsory participation in performance classes, one solo public recital, and an approved small or large ensemble.

MUSI 4F99

Honors thesis

A critical, historical or creative project 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 chairperson before registration.

MUSI 4P83

Choral ensemble IV

The study of selected choral literature through rehearsal and performance; further development of sight-singing and ensemble skills; leading of ensemble warm-ups; research project dealing with performance repertoire. Participation in one of the following three groups, determined by audition: 1) university chorus; 2) chorale; 3) chamber choir. Non-credit participants

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will be required to pay a \$15.00 deposit for scores.

Prerequisite: MUSI 3P83(383hc) or equivalent, and sight-singing skills. Previous or concurrent enrolment in MUSI 2F95 or 2F96 is recommended. Entrance by audition.

Rehearsals, concerts, 2 hours per week for 2 terms. Extra rehearsal time as required.

Theatre

The theatre program is offered on the premise that the study and practice of theatre is a significant discipline adding to the resources of a liberally-educated person. The program offers a broad and comprehensive introduction to all aspects of theatre. Each year's work includes study of dramatic and theatre theory, and opportunity 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 will normally include a major production in each term as well as various minor productions and projects and participation in the spring arts festival.

The THEA 1F99 class will work on a small-scale production in each term. Students in upper year courses will work as a company on the two major productions in capacities determined by their particular course choices.

Students of all years will participate in the spring festival according to the demands of their particular courses and their own need for varied experience.

Apart from THEA 2P98 and 3P00, theatre courses are not normally available to auditors.

Pass program

Eight credits are required:

DRAM 1F93; THEA 1F99, 2F40,

2F50, 2P98/3P00; one of THEA 3F11, 3F40, 3F41, 3F50, 3F52; two of DRAM 2F95, 2F97, 2F98, 3F10, 3F93. DRAM 1F93 must be taken in year 1 or 2.

Notes:

1. Students must satisfy the core and context requirement before year 3.

2. In year 2 or 3, students will take five and one half credits since both THEA 2P98 and 3P00 are required and are co-requisites of other THEA courses.

Honors program

Twelve credits are required:

DRAM 1F93; THEA 1F99, 2F40, 2F50, 2P98/3P00, 4F90; two of THEA 3F11, 3F40, 3F41, 3F50, 3F52; one of THEA 4F40, 4F41, 4F50, 4F52; three of DRAM 2F95, 2F97, 2F98, 3F10, 3F93. DRAM 1F93 must be taken in year 1 or 2.

Combined pass and honors programs

Five credits are required for a pass program: DRAM 1F93; THEA 1F99, 2F40, 2F50; and at least one other credit from the following: THEA 2P98/3P00, 3F11, 3F40, 3F41, 3F50, 3F52. CLAS 1P91/1P92, CLAS 3P02/3P03, FILM 1F94, or other fine arts courses are recommended as elective credits.

Note: three credits numbered 2(alpha) 90 or above must be included in all pass programs.

Seven credits are required for an honors program: DRAM 1F93; THEA 1F99, 2F40, 2F50, 4F90; and at least two other credits from the following: THEA 2P98/3P00, 3F11, 3F40, 3F41, 3F50, 3F52.

Notes:

3. At least three credits numbered 3(alpha) 90 or above must be included in all honors programs.

4. Students must satisfy the core and

context requirement before year 3.

5. Year 3 courses are normally restricted to students with at least three second year credits or special permission of the instructor.

Second language requirement for humanities majors

Students in the theatre stream are required to complete FREN 1F80 or 1F90. It is recommended that students fulfill this requirement by year 2.

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. Students will explore the fundamentals of acting and theatre production. Students will also have the opportunity to develop their potential in production situations.

Prerequisite: interview/audition before registration. Phone Fine Arts office for details. Prospective technical theatre students will be interviewed only. Not open to students with credit in DRAM 199.

Lectures, seminar, workshops, voice, 5 hours per week; additional production and rehearsal time as required.

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.

Prerequisite: THEA 2F10(210) or permission of the instructor.

Not open to students with credit in THEA 2F01(201) or 2F03.

Lectures, workshops, 4 hours per week;

additional rehearsal time as required.

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. Prerequisite: THEA 1F99(199) or permission of the instructor. Not open to students with credit in THEA 2F01(201) or THEA 2F02. Lectures, seminar, workshops, 4 hours per week; additional rehearsal time as required.

THEA 2F10

Drama in education I

The role of drama in education as a means of expression and self-discovery for children (creative drama) and as a method of teaching any subject in the curriculum. This practical course also investigates theories of drama in education. Enrolment in this course will be limited to thirty-six students. Not open to students with credit in DRAM 210. Lectures, workshops, 3 hours per week. Each student will, in addition, be required to undertake some field studies.

THEA 2F40

Stage production I

The theory and practical application of the various elements which comprise theatrical productions: lighting, sound and scenic techniques, ground plans, light plots, costumes, working drawings; the application of these skills to a variety of theatres and production situations. A lab fee of \$20.00 will be charged. Prerequisite: THEA 1F99(199) or permission of the instructor. Co-requisites for theatre majors: i) THEA 2P98 or THEA 3P00; ii) THEA 2F50. Not open to students with credit in DRAM 240. Lectures, workshops, 5 hours per week;

additional production time as required.

THEA 2F50

Acting I

Introduction to acting and the principles of dramatic action. Emphasis is on developing a strong individual technique through exercises, situational improvisations, monologues and scene study. Prerequisite: THEA 1F99(199) or permission of the instructor. Co-requisites for theatre majors: i) THEA 2P98 or 3P00; ii) THEA 2F40. Not open to students with credit in DRAM 250. Lectures, workshops, voice, movement, 5 hours per week.

THEA 2M90-2M99

Special studies in theatre

Studies in a specialized area of theatre. Topics to be announced by the department. Spring 1988: (2M90) **Pirandello and Brecht: Actors' and directors' perspective** A practical course in scenes and monologues from their plays and study of their own statements about their works and/or relevant readings about their works. Prerequisite: THEA 1F99(199) or permission of the instructor. Lectures, seminar, 4 hours per week; additional lab and performance time as required.

THEA 2P98

Social development of the theatre

The interchange between audience and actor throughout history, including theatrical conventions, performance spaces and machinery, in relationship to the changing intellectual and social milieu. The course links theatre studio courses and dramatic literature. Students will be expected to do research projects, and performance projects investigating historical staging problems and essays. Prerequisite: THEA 1F99(199) or permission of the instructor. Lectures, seminar, 3 hours per week. This course will not be offered in 1988/89.

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. Prerequisite: THEA 2F01(201) or 2F02 or 2F03 and permission of the instructor. Lectures, workshops, 4 hours per week; additional production time as required.

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. Prerequisite: THEA 2F10(210) or equivalent (e.g. summer school drama specialist course offered by the Ministry of Education). Admission limited to twenty-four students, to be determined by academic standing. Not open to students with credit in DRAM 309. Lectures and workshops, 3 hours per week.

THEA 3F11

Theatre in education

The role of theatre in education as a form created and presented for children and young people and as a medium for educational communication. Students will participate in practical projects. Prerequisite: THEA 2F10(210) or permission of the instructor. Admission limited to twenty-four students, to be determined by academic standing. Not open to students with credit in DRAM 311. Lectures and workshops, 3 hours per week; additional rehearsal time as required.

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THEA 3F40

Stage production II

Advanced studies in stage production and theatre management which may take the form of internships.

Prerequisite: THEA 2F40(240) or permission of the instructor.

Co-requisite for theatre majors: THEA 2P98 or THEA 3P00, as available and not taken previously.

Not open to students with credit in DRAM 340 and 350 (Production), or THEA 342.

Lectures, seminar, workshops, 5 hours per week; additional production time as required.

THEA 3F41

Design I

Specialist studies in design.

Prerequisite: THEA 2F40(240) or permission of the instructor.

Co-requisite for theatre majors: THEA 2P98 or THEA 3P00, as available and not taken previously.

Not open to students with credit in DRAM 340 and 350 (Design).

Lectures, seminar, workshops, 5 hours per week; additional production time as required.

THEA 3F50

Acting II

Further studies in acting technique. Emphasis is on the creation of character in dramatic situations.

Prerequisite: THEA 2F50(250) or permission of the instructor.

Co-requisite for theatre majors: THEA 2P98 or 3P00, as available, and not taken previously.

Not open to students with credit in DRAM 340 and 350 (Acting), or THEA 351.

Lectures, seminar, workshops, 5 hours per week.

THEA 3F52

Directing I

Specialist studies in directing. Prerequisite: THEA 2F50(250) or permission of the instructor.

Co-requisite for theatre majors: THEA 2P98 or THEA 3P00, as available and not taken previously.

Not open to students with credit in DRAM 340 and 350 (Directing).

Lectures, seminar, workshops, 5 hours per week; additional production time as required.

THEA 3F91

Writing for stage, screen and radio

Theory and practice. Workshops on scripts in progress. Selected scripts may be produced in the department's annual spring festival.

Prerequisite: permission of the instructor. Admission will be based on samples of written work.

Not open to students with credit in DRAM 4F91.

Seminar, workshops, 3 hours per week.

THEA 3F99

Special honors tutorial

Advanced study of an independent nature in an area of mutual interest to the student and the instructor.

A written proposal *must* be approved by the chairperson before registration.

THEA 3P00

Trends in modern theatre

The impact of innovative theorists on contemporary performance and the place of the modern actor in society. Study of group creations, documentary drama, street theatre, guerilla theatre and other experimental forms as well as modern approaches to traditionally scripted material and the influences of other theorists. Research projects, performance projects, essays.

Prerequisite: THEA 1F99(199) or permission of the instructor.

Lectures, seminar, 3 hours per week.

THEA 4F40

Stage production III

Further studies in stage production and theatre administration. Such study may take the form of tutorials and will include working closely with instructors on special projects.

Prerequisites: THEA 3F40(340) and permission of the instructor.

Not open to students with credit in DRAM 440 and 450 (Production), or THEA 442.

Lectures, seminar, workshops, 5 hours per week; additional production time as required.

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.

Prerequisites: THEA 3F41(341) and permission of the instructor.

Not open to students with credit in DRAM 440 and 450 (Design).

Lectures, seminar, workshops, 5 hours per week; additional production time as required.

THEA 4F50

Acting III

Further studies in acting. Such study may take the form of tutorials and will include working closely with the instructor on special projects.

Prerequisite: THEA 3F50(350) and permission of the instructor.

Not open to students with credit in DRAM 440 and 450 (Acting), or THEA 451.

Lectures, seminar, workshops, 5 hours per week; additional production time as required.

THEA 4F52

Directing II

Further studies in directing. Such study may take the form of tutorials and will include working closely with instructors on special projects.

Prerequisite: THEA 3F52(352) and permission of the instructor.

Not open to students with credit in DRAM 440 and 450 (Directing.)

Lectures, seminars, workshops, 5 hours per week; additional production time as required.

THEA 4F90

Critical theory and practice

(also offered as DRAM 4F90 and FILM 4F90)

An advanced study of critical theory and its application to theatre, dramatic literature, film, and popular culture. Students will be expected to produce a major piece of research.

Prerequisite: year 4 honors standing or permission of the instructor.

Not open to students with credit in DRAM(FILM) 402.

Seminars, 3 hours per week.

THEA 4F99

Honors thesis

A critical, historical or creative project in theatre of mutual interest to the honors 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 chairperson before registration.

THEA 4P11

Creative movement and classroom drama

A course for teachers of both secondary and elementary students combining movement and drama so that they learn how to involve students in a joint project. The course will include theories of education, observation skills, and practical work on the theories.

Prerequisite: permission of the instructor.

Lectures, seminars, 3 hours per week. This course will not be offered in 1988/89.

Visual arts

The program consists of studio and art history courses which are designed to provide a practical and critical understanding of the visual arts. The aim is to help the student 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 streams and to departmental events.

Studio activities include a variety of approaches: intuitive, analytical, experimental. Students are assisted by artist-teachers who have professional experience 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.

Pass program

Eight credits are required: VISA 1F90, 1F92, 1F95, 2F92; one of VISA 2F03, 2F04, 2F05; two of VISA 2F94, 2F96, 2M95-2M99, 3F03, 3F04; one of VISA 2F20, 2F40, 2F50, 2F90, 3F05, 3F20, 3F21, 3F95, or FINA 3P82 and VISA 2P97.

Notes:

1. VISA 1F90 must be taken in year 1. Visual arts majors should also take VISA 1F92 or 1F95 in year 1.

2. FILM 1F94 is a recommended elective for VISA students.

Honors program

Twelve credits are required: VISA 1F90, 1F92, 1F95, 2F92, 3F92, 4F06; one of VISA 2F03, 2F04, 2F05; two of VISA 2F94, 2F96, 2M95-2M99, 3F03, 3F04; two of VISA 2F20, 2F40, 2F50, 2F90, 3F05, 3F20, 3F21, 3F95, or one of these courses and two of FINA 3P82, VISA 2P97, 4P10 and 4P11; one other VISA studio credit.

3. VISA 3F95 is especially recommended for honors VISA majors.

Combined pass program

Five credits are required: VISA 1F90, and any four VISA credits.

4. Three credits numbered 2(alpha)90 or above must be included in all pass programs.

Combined honors program

Seven credits are required: VISA 1F90, 1F92, 1F95, and any other four VISA credits.

Notes:

5. Three credits numbered 3(alpha)90 or above must be included in all honors programs.

6. 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 2P97, 3F20, 3F21, 4M00-4M09, 4P10, 4P11, 4P12, 4P13 and 4P14.

7. *Students who do not have the necessary prerequisites for studio courses (VISA 1F92, 1F95, 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.*

8. Year 3 courses are normally restricted to students with at least three second year credits or special permission of the instructor.

Second language requirement for humanities majors

Students in the visual arts stream are required to complete FREN 1F80, or one 1F90-level or two 1F00-level courses in a language other than English. It is recommended that students fulfill this requirement by year 2.

Description of courses

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

VISA 1F90

Introduction to the history of art
A critical survey of major styles in architecture, sculpture, and painting

Fine Arts

from antiquity to the twentieth century.
No studio work.
Not open to students with credit in FINA(VISA) 191.
Lectures, seminar, 3 hours per week.

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.

Prerequisite: a portfolio must be submitted before registration, unless the student already has credit for VISA(FINA) 195 or VISA 1F95.
Not open to students with credit in VISA(FINA) 202.
Lectures, studio work, 5 hours per week.

VISA 1F95

Foundation studio

A studio course in the principles of composition and design which form the basis of all visual art. Form, structure, space, line, color, proportion, rhythm, etc. will be explored, using a variety of drawing and modelling materials. Students must supply their own materials.

Prerequisite: a portfolio must be submitted before registration unless the student already has credit for VISA 1F92(192) or 202.

Not open to students with credit in FINA 201.

Lectures, studio work, 5 hours per week.

VISA 2F03

Painting I

Developing painting skills; introduction to color theory; explorations of technique. Students must supply their own materials.

Prerequisite: VISA(FINA) 191 or VISA 1F90(190); VISA 1F92(192) or 202 or 1F95(195) and/or permission of the instructor.

Not open to students with credit in FINA 203.

Lectures, studio work, 5 hours per week.

VISA 2F04

Printmaking I

Introduction to techniques of etching, silkscreen and relief printmaking, with an emphasis on exploring the technical aspects of each technique. Students must supply their own materials.

Prerequisite: VISA(FINA) 191 or VISA 1F90(190); VISA 1F92(192) or 202 or 1F95(195) and/or permission of the instructor.

Lectures, studio work, 5 hours per week.

This course will not be offered in 1988/89.

VISA 2F05

Sculpture

Fundamentals of sculpture, exploring form, structure, space, weight, plane, tension, rhythm, etc. Instruction in the handling and care of basic modelling materials (clay, plaster, cement), the building of armatures, the rudiments of plaster casting from waste molds.

Models, maquettes and drawings will be made; subject matter will include first-hand studies from life. Students must supply their own materials.

Prerequisite: VISA(FINA) 191 or VISA 1F90(190); VISA 1F92(192) or 202 or 1F95(195) and/or permission of the instructor.

Lectures, studio work, 5 hours per week.

VISA 2F20

The aesthetics of photography

The history of photography from its beginnings to current technological innovations; the principles of critical analysis and the theory of photography

Prerequisite: VISA(FINA) 191 or VISA 1F90(190) or permission of the instructor.

Lectures, seminar, lab, 3 hours per week.

This course will not be offered in 1988/89.

VISA 2F40

Renaissance art and architecture

The classical resurgence of 1400-1600; individual works and artists in the social and intellectual context of the time, including Alberti, Brunelleschi,

Donatello, Michelangelo, Raphael, Leonardo, etc.

Prerequisite: VISA(FINA) 191 or VISA 1F90(190) or permission of the instructor.

Lectures, seminars, 3 hours per week.

This course will not be offered in 1988/89.

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*.

Prerequisite: VISA(FINA) 191 or VISA 1F90(190) or permission of the instructor.

Not open to students with credit in FINA 250.

Lectures, seminars, 3 hours per week.

This course will not be offered in 1988/89.

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.

Prerequisite: VISA(FINA) 191 or VISA 1F90(190) or permission of the instructor.

Not open to students with credit in VISA(FINA) 291.

Lectures, seminars, 3 hours per week, museum visits.

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.

Prerequisite: VISA 1F90(190); VISA 1F92(192), VISA 1F95(195) and permission of the instructor.

Not open to students with credit in VISA 302.

Lectures, studio work, 5 hours per week.

VISA 2F94

Art studies abroad

Studies in the artistic heritage of

France at two bases: the mediaeval 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. Students must apply by March 15, 1988 to Guy Ducornet, department of Fine Arts. To be offered in summer day session, 1988.

Prerequisite: a visual arts course or permission of the instructor.

VISA 2F96

Interdisciplinary workshop

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.

Prerequisite: one course in the Fine Arts department and permission of the instructor.

Lectures, studio work, 5 hours per week.

This course will not be offered in 1988/89.

VISA 2M95-2M99

Special studies in studio

Studies in a specialized area of the visual arts.

Spring evening 1988: (2M96) **The Art of Clay**. The history and practice of the art of clay, including the basic techniques of forming, glazing and firing.

Prerequisite: VISA 2F05(205) or permission of the instructor.

Lectures, studio work.

VISA 2P97

Classical archaeology

(also offered as CLAS 2P97)

A survey of classical archaeology, and a detailed study of selected Greek and Roman sites.

Prerequisite: VISA 1F90(190) or VISA(FINA) 191 or two of CLAS 1F91(191hc), 1P92(192hc), 1P95(195hc), 1P97(197hc).

3 hours per week.

VISA 3F03

Painting II

Further studies in techniques of painting. Students must provide their own materials.

Prerequisite: VISA(FINA) 2F03(203) and permission of the instructor.

Lectures, studio work, 5 hours per week.

VISA 3F04

Printmaking II

Further exploration of printmaking techniques, including inking, multi-plate and multi-media printing. There will be an emphasis on personal imagery. Students must provide their own materials.

Prerequisite: VISA 2F04(204) and permission of the instructor.

Lectures, studio work, 5 hours per week.

This course will not be offered in 1988/89.

VISA 3F05

Modern art: 1914-1970

A detailed study of twentieth-century art: the role and function of the artist in relation to the European and North American *avant-garde* movements.

Prerequisite: VISA 1F90(190) and/or permission of the instructor.

Not open to students with credit in VISA 390 or 391.

Lectures, seminar, 3 hours per week and museum visits.

This course will not be offered in 1988/89.

VISA 3F20

Greek art and architecture

(also offered as CLAS 3F20)

A survey of Greek art and architecture from the Bronze Age through the Hellenistic period within the framework of historical and cultural change.

Prerequisite: VISA 1F90(190) or VISA(FINA) 191 or two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97(197hc).

Not open to students with credit in VISA(CLAS) 298.

3 hours per week.

VISA 3F21

Roman art and architecture

(also offered as CLAS 3F21)

A survey of Roman art and architecture

from the early Iron Age through the late Empire within the framework of historical and cultural change with attention to the influence of the Classical heritage on early Christian/Byzantine art.

Prerequisite: VISA 1F90(190) or VISA(FINA) 191 or two of CLAS 1P91(191hc), 1P92(192hc), 1P95(195hc), 1P97(197hc).

Not open to students with credit in VISA(CLAS) 299.

3 hours per week.

VISA 3F92

Expressive drawing

Advanced drawing as a means of expression. Students must supply their own materials.

Prerequisite: VISA 1F90(190), 2F92(292) and permission of the instructor.

Lectures, studio work, 5 hours per week.

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.

Prerequisite: VISA 1F90(190) and one other art history credit and permission of the instructor.

Not open to students with credit in VISA 310

Lectures, seminar, 3 hours per week.

VISA 3F99

Special honors tutorial

Advanced study in an area of mutual interest to the student and the instructor.

A written proposal *must* be approved by the chairperson before registration.

VISA 3M00-3M04

Special studies in art history

Studies in a selected area of art history. Spring evening 1988: (3M00) **Contemporary art: ideas and practice**. Contemporary Canadian artists and their work. The relationship between the concepts of the artist and the actual production of art. Analysis and discussion of the aesthetics in contemporary society.

Prerequisite: VISA 1F90(190) and permission of the instructor.

Lectures, seminar.

Fine Arts

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 to the instructor before registration. Students should contact the chairperson for further information. A lab fee of \$45.00 is charged. Students must supply their own materials. Prerequisite: honors standing in visual arts, or permission of the instructor. Studio work, 5 hours per week.

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 chairperson before registration.

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 day session for approximately three or four weeks of intensive study abroad. Prerequisite: permission of the instructor.

VISA 4P10

The city in the ancient world

(also offered as CLAS 4P10)
The origins and evolution of the city in the Near East; the development of the city and of city planning in Greece, Italy, and the Roman Empire from the end of the Late Bronze Age through the early Byzantine period. The forms and uses of public and private buildings, religious and secular.

Prerequisite: VISA 1F90(190) or VISA(FINA) 191 or a classics credit numbered 2(*alpha*)90 or above or permission of the instructor.
Not open to students with credit in

VISA(CLAS) 388hc or CLAS 396.
3 hours per week.

VISA 4P11

The art and architecture of the ancient Near East

(also offered as CLAS 4P11)
A study of the art and architecture of Egypt, the Levant, Mesopotamia, Iran and eastern Anatolia from the Neolithic period through the Early Iron Age. Prerequisite: VISA 1F90(190) or VISA(FINA) 191 or a classics credit numbered 2(*alpha*)90 or above or permission of the instructor.
Not open to students with credit in VISA(CLAS) 389hc.
Lectures, seminar, 3 hours per week.

VISA 4P12

Greek sanctuaries

(also offered as CLAS 4P12)
A study of the great Panhellenic shrines (Delphi, Olympia, Epidauros, and others): topography, architecture, art, with emphasis on the interplay between tradition and changing needs and values. Prerequisite: VISA 1F90(190) or VISA(FINA) 191 or a classics credit numbered 2(*alpha*)90 or above or permission of the instructor.
Not open to students with credit in VISA(CLAS) 397hc.
3 hours per week.

VISA 4P13

The art and archaeology of Cyprus

(also offered as CLAS 4P13)
A survey of 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. Prerequisite: VISA 1F90(190) or VISA(FINA) 191 or a classics credit numbered 2(*alpha*)90 or above or permission of the instructor.
Not open to students with credit in VISA(CLAS) 398hc.
3 hours per week.

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 B.C. The art and architecture of the Minoans on Crete and the Mycenaean on the Greek mainland will be stressed.

Prerequisite: VISA 1F90(190) or VISA(FINA) 191 or a classics credit numbered 2(*alpha*)90 or above or permission of the instructor.
Not open to students with credit in VISA (CLAS) 395 or 402hc.
3 hours per week.

French, Italian and Spanish

Officers of instruction

Chairperson

L.A. Rosmarin (until June 30, 1988)

French section

Professors

A. Amprimoz
M.J. Cardy
L.A. Rosmarin

Associate professors

L. Boldt-Irons
B.J. Bucknall
D. Essar, co-ordinator
B.A.R. McEwen

Italian section

Associate professor

C.J.A. Federici, co-ordinator

Assistant professor

E. Virgulti

Spanish section

Professor

E. González-G de Oro

Associate professor

J.A. Fernández, co-ordinator

General information

Schmon tower 1132

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. Particular

importance is attached to the cultures of French-speaking territories outside France, especially Quebec, and of Latin America. Students are given encouragement and help to visit the language environment in which they are interested. Through a program offered by the department in collaboration with Dalhousie University, third year students in French have the opportunity of spending one academic year at the University of Provence in Aix-en-Provence, France. In addition, the department favours and facilitates participation by French students at all levels in French immersion programs offered in France (Tours and Angers) and Québec. Brock University credit can often be obtained for work completed in many of these programs.

Notes:

1. Second language requirement for humanities majors

Majors in French, Italian and Spanish are required to complete a 1F90 level credit in another language or DRAM 1F93 or ENGL 1F91 in either year 1 or year 2:

2. A course in Latin or Greek is a desirable elective.

3. Students who have grade 13 standing or its equivalent in the language take the course numbered 1F90; others take courses numbered 1F00 or 1F80.

FREN 1F80 is intended for students who have completed between two and four years of high school French. Students who obtain an exceptionally high grade in FREN 1F80 may be authorized by the department to enrol in year 2 French courses. FREN 1F80 and FREN 1F90 may not be taken in the same academic session.

4. Courses are usually three one-hour sessions per week, although variations such as two 1-1/2 hour patterns may be set. Courses numbered 1F00, 1F80, and 1F90 are three hours per week plus

language laboratory time.

5. Courses numbered 1F00 are taught partly in English; those numbered 1F80 or 1F90 are taught in the language whenever possible; all courses numbered 2F00 and up are taught in the language.

6. Language courses numbered 1F00 and 1F80 may not normally be taken by those who have grade 13 standing or its equivalent in the language.

7. Prerequisites for French, Italian, and Spanish 1F90: grade 13 standing in the language in the preceding year; or a previous 1F00 course in the language; or permission of the department. Prerequisites for courses numbered 2F00 and above: lower courses and/or approval of the department.

8. French-speaking students who have grade 13 in Français or its equivalent must take FREN 2F00 in first year.

9. FREN 1F00 is a degree credit; however, it may not be used to meet the departmental requirements for a single or combined program in French. Similarly ITAL 1F00 and SPAN 1F00 may be counted towards a degree, but may not be used to meet requirements for single or combined programs in the respective languages.

10. Only one of FREN 1F80 or FREN 1F90 may be used to meet the departmental requirements for a French major. Similarly, only one of ITAL 1F80 or ITAL 1F90 may be used to meet requirements for an Italian major.

11. Students who are interested mainly in keeping up and improving their language skills have a good choice of courses at their disposal in each year of study:

Year 1: FREN 1F00, 1F80, 1F90
Year 2: FREN 2F00

French, Italian and Spanish

Year 3: FREN 2F99, 3F90

Year 4: FREN 4F01

Pass program in a single major

French

Year 1

FREN 1F90 (or FREN 1F80, see Note 3. above); one science and one social science context credit; two elective credits.

Year 2

FREN 2F00; two of FREN 2F01, 2F05, 2F31, 2F41, 2F42, or courses numbered 2F90 or higher with permission of the department; two elective credits.

Year 3

Three French credits numbered 2(alpha)90 and above, two elective credits.

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 Italian credits numbered 2(alpha)90 and above; two elective credits.

Spanish

Year 1

SPAN 1F00 or 1F90; one science and one social science context credit; two elective credits.

Year 2

Students with SPAN 1F00: SPAN 1F90; two of SPAN 1F95, 1F96, 2F10;

two elective credits.

Students with SPAN 1F90: SPAN 2F00; two of SPAN 1F95, 1F96, 2F10; two elective credits.

Year 3

Students with SPAN 1F00: SPAN 2F00; two of SPAN 3F92 to 4F25; two elective credits.

Students with SPAN 1F90: three of SPAN 3F92 to 4F25; two elective credits.

Honors program in a single major

French

Years 1, 2 and 3

As in pass program.

Year 4

Five of FREN 2F90 to 4F99. Honors students must take FREN 3F90 in either year 3 or 4. It should be noted that three credits numbered 3(alpha)90 or above must be included in all honors degrees.

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

Years 1, 2 and 3

As in pass program.

Year 4

Five of Spanish 2F10 to 4F25. It should be noted that three credits numbered 3(alpha)90 or above must be included in all honors degrees.

Pass program in two languages

(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.

Honors program in two languages

(applicable to all languages)

Years 1, 2 and 3

As in pass program.

Year 4

Three credits in language A; two credits in language B. It should be noted that three credits numbered 3(alpha)90 or above must be included in all honors degrees.

Combined major programs

Pass

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.

Honors

Years 1, 2 and 3
As in pass program.

Year 4
Three credits in the chosen language numbered 3(*alpha*) 90 or above.

Please note that year 3 courses are restricted to students with at least three second year credits or with special permission of the instructor.

Description of courses

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

French section

FREN 1F00
Language (introductory)
Essentials of grammar, emphasis on idiomatic expression. Extensive practice in reading, writing and speaking.
Lectures, 3 hours per week; plus language lab.

FREN 1F80
Practical language
Basic skills of written and oral expression. Emphasis on communication for general purposes. Selected texts.
Prerequisite: 2-4 years of French at high school level in Ontario.
Lectures, 3 hours per week; plus language lab.

FREN 1F90
Language and literature
Practice in speaking, reading, and

writing; self-expression through discussion. Selected literary texts.
Prerequisite: grade 13 French.
Lectures, 3 hours per week; plus language lab.

FREN 2F00
Language (intermediate)
Literary and idiomatic expression. Composition, critical written and oral expression through discussion of general and literary topics. Transposition into French.
Prerequisite: French 1F90(190) or grade 13 Français or grade 13 French Immersion.
Lectures, 3 hours per week.

FREN 2F01
Anthology of literature in French
Explication of selected literature in French from the Middle Ages to the present day including material from Canada, Africa and the Caribbean.
Prerequisite: FREN 1F90(190).
Lectures, 3 hours per week.

FREN 2F05
Introduction to French-Canadian literature
Analysis and interpretation of representative French-Canadian texts drawn from several genres. Authors studied include: Hémon, Hébert, Dubé, Thériault, Bessette, Roy, Blais, Ferron, Carrier, Godbout and Tremblay.
Not open to students with credit in FREN 216.
Prerequisite: FREN 1F90(190).
Lectures, 3 hours per week.

FREN 2F31
Culture and civilization in France
A day by day field exploration in France, of French culture, past and present, concentrating on the culture and the people. The course takes place in July in Angers and Paris and immerses students in the life of the country as well as in the French language.

Prerequisite: FREN 1F90(190).
Students must apply before March 15, 1989 to Professor L. A. Rosmarin.

FREN 2F41
Contemporary literature of Africa and the Caribbean
Contemporary poetry, theatre and novels of the French-speaking countries of Africa and the Caribbean in the context of their historical, social, and ideological background. Authors studied included: Césaire, Kateb, Dadié, Kourouma, Ouloguem, Senghor and Glissant.
Prerequisite: FREN 1F90(190).
Not open to students with credit in FREN 291.
Lectures, 3 hours per week.

FREN 2F42
Children's literature
A selection of texts for children from the seventeenth century to the present day. Authors studied include: La Fontaine, Perrault, Verne, Daudet, Maurois, Aginé, Prévert, Jacob, Ionesco and Tournier.
Prerequisite: FREN 1F90(190).
Lectures, 3 hours per week.

FREN 2F50
Introduction to the comparative phonetics of English and French (given in English)
(also offered as TESL 2F50)
Distinctive phonological features of French and English will be studied, with a view to aiding French and TESL instructors to make a comparative phonological analysis of, among other things, French and English.
Prerequisite: FREN 1F90(190).
Lectures, seminar, 3 hours per week.

FREN 2F90
19th century novel
Its evolution from the Romantic era to the Catholic revival. Naturalism and realism. Authors studied include: Constant, Stendhal, Balzac, Flaubert,

French, Italian and Spanish

Maupassant, Zola and Huysmans.
Prerequisite: any French course numbered 2F00(200) or higher.
Lectures, 3 hours per week.

FREN 2F92

Literature, 18th century
Emphasis on Enlightenment, Encyclopédie, sensibility. Authors studied include: Lesage, Montesquieu, Marivaux, Voltaire, Diderot, Rousseau, Beaumarchais and Laclos.
Prerequisite: Any French course numbered 2F00(200) or higher.
Not open to students with credit in FREN 211.
Lectures, 3 hours per week.

FREN 2F93

20th century French literature to 1945
Analysis of tendencies and major works in several genres. Authors studied include: Claudel, Gide, Alain-Fournier, Proust, Romain, Giraudoux, Saint-Exupéry, Malraux, Bernanos and Montherlant.
Prerequisite: any French course numbered 2F00(200) or higher.
Not open to students with credit in FREN 391.
Lectures, 3 hours per week.

FREN 2F95

French-Canadian novel and short story
Evolution and tendencies from the nineteenth century to the present day. Authors studied include: Aubert de Gaspé, Ringuet, Langevin, Roy, Blais, Hébert, Aquin and Ducharme.
Prerequisite: any French course numbered 2F00(200) or higher.
Not open to students with credit in FREN 396.
Lectures, 3 hours per week.

FREN 2F99

Translation I
(formerly FREN 2F49)
An introduction to comparative stylistics and a preparation for FREN 4F01 (Translation II). Questions

presented and studied include fundamental linguistic terminology, basic principles of translation, structural and semantic contrasts between French and English as well as cultural implications in language studies; pragmatic exercises stressing stylistic analysis of texts and their translations, lexical exactitude and problem-solving in terminology.
Prerequisite: FREN 2F00(200)
Not open to students with credit in FREN 2F49.
Lectures, 3 hours per week.

FREN 3F90

Stylistics
Fundamental principles of stylistics and the related disciplines of rhetoric and poetics; the study of semantics with particular emphasis on French idiomatic expressions; advanced composition.
Prerequisite: FREN 2F00(200).
Lectures, 3 hours per week.

FREN 3F91

Francophone feminists of the 20th century
(formerly FREN 3F81)
Women writers in France and Quebec who are rethinking traditional women's roles and who have some very different solutions to this basic issue.
Prerequisite: any French course numbered 2F00(200) or higher.
Not open to student with credit in FREN 3F81(381).
Lectures: 3 hours per week.

FREN 3F95

French-Canadian theatre
(formerly FREN 3F85)
Contemporary French-Canadian theatre: background and traditions, analysis of selected plays, international influences, and current directions. Authors studied include: Gélinas, Dubé, Hébert, Loranger, Tremblay, Barbeau, Germain, Maillet, Laberge, Charette, Dubois.
Prerequisite: Any French course numbered 2F00(200) or higher.
Not open to students with credit in FREN 3F85 or 426.
Lectures, 3 hours per week.

FREN 3F97

Literature, 17th century
The ideal of French classicism. Assessment of conflicting religious, philosophical, artistic, and moral currents. Authors studied include: Corneille, Moliere, Racine, Pascal, Mme de Lafayette, Saint-Simon, La Fontaine.
Prerequisite: any French credit numbered 2F00(200) or higher.
Lectures, 3 hours per week.

FREN 3F98

19th century poetry and theatre
Romanticism, symbolism, and decadence. Authors studied include: Lamartine, Vigny, Hugo, Nerval, Baudelaire, Rimbaud, Mallarmé, Bécque.
Prerequisite: any French course numbered 2F00(200) or higher.
Lectures, 3 hours per week.

FREN 4F00

History of the language
The origins of French, dialectal and provincial variations since the Middle Ages, social influences upon language, lexicology and idiomatology, the impact of other languages on French, assessment of French as a vehicle of thought through the ages.
Lectures, 3 hours per week.

FREN 4F01

Translation II
(formerly FREN 3F99)
Building on the basis of FREN 2F99, this course will stress both the cultural and technical implications of problem solving in translation. The theory and history of the discipline will be presented in order to demonstrate the constant terminological retraining necessary for professional translators.
Prerequisite: FREN 2F99(2F49).
Lectures, 3 hours per week.

FREN 4F10

Language and literature of the Middle Ages
From the *chansons de geste* to the 15th century. *Romans courtois*, satire,

history and theatre. Grammar and syntax of old French. Authors studied include: Bérout, Bodel, Villon.
Lectures, 3 hours per week.

FREN 4F20

Literature, 16th century

Humanism within the French Renaissance. Pléiade poetry. Authors studied include: Rabelais, DuBellay, Ronsard, D'Aubigné, Montaigne.
Lectures, 3 hours per week.

FREN 4F85

French-Canadian poetry

Evolution and tendencies from the late nineteenth century to the present day. Authors studied include: Nelligan, Saint-Denys Garneau, Grandbois, Miron, Brossard, Brault.
Not open to students with credit in FREN 426.
Lectures, 3 hours per week.

FREN 4F93

20th century literature from 1945 to the present day

Analysis of tendencies and major works in several genres, including those of the theatre of the absurd and the *nouveau roman*. Authors studied include: Sartre, Camus, Duras, Genet, Ionesco, Beckett, Robbe-Grillet, Sarraute, Butor, Le Clézio.
Not open to students with credit in FREN 391.
Lectures, 3 hours per week.

FREN 4F98

Critical theory and methodology

A study of contemporary critical theories and of advanced bibliographical research in the various areas of French literature. Assignments will consist of two major projects to be completed in second term.
Prerequisite: two French credits numbered 2F90 or higher.
Lectures, 3 hours per week.

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.
Prerequisite: honors standing and permission of the department.

FREN 4V60-4V65

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.
1988/89: (4V62) **Seventeenth century moralists.**
1988/89: (4V63) **Proust.**
Lectures, 3 hours per week.

Italian section

ITAL 1F00

Language (introductory)

Acquisition of reading and oral skills, elementary grammar. Conversation and composition.
Lectures, 3 hours per week; plus language lab.

ITAL 1F80

Introductory language for dialect speakers.

Basic grammatical notions and composition skills for students who have some knowledge of the language but who have not formally studied it.
Lectures, 3 hours per week; plus language lab.

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.

ITAL 1F95

Culture and civilization

(given in English)

A survey of the artistic heritage of Italy and of 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.

Not open to students with credit in ITAL 230.

Lectures, 3 hours per week.

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.

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.

Not open to students with credit in ITAL 290, 299 or 390.

Prerequisite: ITAL 1F90(190).

Lectures, 3 hours per week.

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*.

Prerequisite: ITAL 1F90(190).

Lectures, 3 hours per week.

French, Italian and Spanish

ITAL 2P92

Italian theatre

A survey of Italy's major playwrights and their more significant works. Authors include Machiavelli, Goldoni, and Pirandello.

Prerequisite: any Italian credit numbered 2(alpha)00 or higher.

Lectures, 3 hours per week.

ITAL 3F93

Literature of the Middle Ages

Intensive study of the works of the major writers. Prescribed texts: Dante, *La Divina Commedia*; Petrarch, *Il Canzoniere*; Boccaccio, *Il Decameron*. Lectures, 3 hours per week.

ITAL 3P90

Italian Romanticism: prose and poetry

Major texts of the Italian Romanticism, including Manzoni, *I Promessi Sposi*; Foscolo, *Le Ultime Lettere di Jacopo Ortis*; Leopardi, *Canti*.

Prerequisite: ITAL 2F00(200).

Not open to students with credit in ITAL 210.

Lectures, 3 hours per week.

ITAL 3P91

19th century prose and poetry

A study of post-romantic literature with particular emphasis on Verismo and Decadentismo. Texts include: Verga, *I Malavoglia*; Fogazzaro, *Piccolo Mondo Antico*; D'Annunzio, *Il Piacere*. Poetry of Carducci, Pascoli, D'Annunzio.

Prerequisite: ITAL 2F00(200).

Not open to students with credit in ITAL 210.

Lectures, 3 hours per week.

ITAL 3P94

The modern novel

Representative novels from major modern and contemporary writers such as Pirandello, Svevo, Moravia, Pavese, Buzzati, Silone, Vittorini, Calvino, Sciascia.

Not open to students with credit in ITAL 391.

Lectures, 3 hours per week.

ITAL 3P95

Modern Italian poetry

Major poets and currents of the twentieth century. Selections from D'Annunzio, Pascoli, the Crepuscolari, the Vociani, the Futurists, Saba, Ungaretti, Montale, Quasimodo, the Hermetics, Post-Hermeticism.

Prerequisite: ITAL 2F00.

Not open to students with credit in ITAL 395; or ITAL 391 prior to 1985.

Lectures, 3 hours per week.

ITAL 4F10

Prose and poetry of the Italian Renaissance

Major thinkers, epic poets, and currents of the Renaissance. Prescribed texts: Machiavelli, *Il Principe*; Guicciardini, *Ricordi*; Castiglione, *Il Cortegiano*; Ariosto, *Orlando Furioso*; Tasso, *Gerusalemme Liberata*.

Lectures, 3 hours per week.

Spanish section

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.

SPAN 1F95

Spanish culture and civilization (given in English)

Survey of historical, social, and artistic factors fundamental to an understanding of modern Spain. Selected texts, slides, and tapes.

Not open to students with credit in SPAN 230.

Lectures, 3 hours per week.

SPAN 1F96

Spanish-American culture and civilization

(given in English)

Survey of historical, social and political developments from pre-Columbian times to the present day. Selected texts, tapes and slides.

Not open to students with credit in SPAN 240.

Lectures, 3 hours per week.

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.

SPAN 2F10

Spanish-American literature

Chronological coverage from early times to the present day. Anthology readings.

Lectures, 3 hours per week.

SPAN 2F99

Translation

Translation of a wide range of miscellaneous articles, essays, excerpts and business correspondence from English and Spanish newspapers, magazines and books. Study and discussion of main difficulties in the translation of both languages.

Prerequisite: SPAN 1F90 or permission of the instructor.

Lectures, seminar, 3 hours

SPAN 3F92

Literature, 16th century

First century of the Golden Age. Humanism and the Renaissance in Spain. Lyric poetry; origins of the picaresque novel; mysticism; the birth of the modern novel; prescribed authors and texts: Garcilaso; Fr. Luis de León; Santa Teresa; San Juan de la Cruz; anonymous, *Lazarillo de Tormes*; Cervantes, *Don Quijote*.

Lectures, 3 hours per week.

SPAN 3F93

Literature, 17th century

Second century of the Golden Age. Continuing development of lyric poetry and the picaresque novel; evolution of the national theatre. Prescribed texts: Góngora, *Polifemo*; Quevedo, *El Buscón*; Lope de Vega, *Fuenteovejuna*; Tirso de Molina, *El burlador de Sevilla*; Calderón, *La vida es sueño*. Lectures, 3 hours per week.

SPAN 3F95

20th century Spanish-American novel

Chronological and regional coverage from 1900 to the present day. Prescribed texts: Azuela, *Los de abajo*; Rivera, *La vorágine*; Gallegos, *Doña Bárbara*; Barrios, *El hermano asno*; Güiraldes, *Don Segundo Sombra*; Alegría, *El mundo es ancho y ajeno*; Asturias, *El señor Presidente*. Lectures, 3 hours per week.

SPAN 3F96

Stylistics and advanced composition

Concepts of style, past and present. Principles of phonology, morphology, and syntax. Compositions on literary and non-literary topics. Lectures, 3 hours per week.

SPAN 3F97

The generation of '98

A study of Spanish thinkers, poets, novelists, and dramatists of the beginning of the 20th century. Prescribed texts: Unamuno, *S. Manuel Bueno, mártir*; Baroja, *El árbol de la ciencia*; Azorín, *Castilla*; A. Machado, *Antología*; Valle Inclán, *Martes de carnaval*; J.R. Jiménez, *Platero y yo*. Lectures, 3 hours per week.

SPAN 3F98

Literature, 18th and 19th centuries

A general survey of Spanish literature of the period with emphasis on artistic movements and the social, historical, and cultural background of the time. Prescribed texts: Feijoo, *Teatro crítico universal*; Moratín, *El sí de las niñas*; Larra, *Artículos de costumbres*; Zorrilla, *Don Juan Tenorio*; Bécquer, *Rimas, Leyendas*; Pérez Galdós, *Torquemada*; Clarín, *¡ Adiós, Cordera!* Lectures, 3 hours per week.

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.

SPAN 4F10

Language and literature of the Middle Ages

Grammar and syntax of mediaeval Spanish. Intensive study of major works. Prescribed texts: *Mío Cid*; Don Juan Manuel, *El Conde Lucanor*; Arcipreste de Hita, *Libro de buen amor*; F. Rojas, *La Celestina*. Lectures, 3 hours per week.

SPAN 4F25

Literature, 20th century

A panoramic view of the culture of 20th century Spain emphasizing the literary trends and the most important contemporary names in the novel, the theatre and poetry. Prescribed texts: Ortega y Gasset, *La rebelión de las masas*; García Lorca, *Romancero gitano, La casa de Bernarda Alba*; Aleixandre, *Mis poemas mejores*; Cela, *La familia de Pascual Duarte*; Mihura, *Tres sombreros de copa*; Buero Vallejo, *El tragaluz*. Lectures, 3 hours per week.

General Studies and 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 a **general studies program or an integrated studies program.**

A **general studies program** is offered at both the pass and honors degree levels and must be approved by the dean in whose division most of the courses are to be taken. 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. Of the 20 credits required for an honors degree, at least seven credits must be chosen in one subject and five in another. It should be noted that a maximum of five credits from any combination of administrative studies, education, physical education, recreation and leisure studies, and teaching English as a second language can be included in a pass BA or BSc; within an honors BA or BSc a maximum of seven may be taken. Education may only be used for a minor concentration (i.e. the three course component) and only in a pass degree. An honors degree with education as a component is not possible.

A credit in a second language is required of students who choose a concentration of courses in humanities. All others must include a credit in mathematics or computer science or approved equivalent. If students choose courses from the humanities and any of the other divisions, they should consult the appropriate dean 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 or the assistant registrar, students programs when choosing courses.

An **integrated studies program** is offered at both pass and honors degree 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. 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 second language (in accordance with the second language requirement of the division 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 is considered.

Students graduating in combined major, general or integrated studies programs 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.

Geography

Officers of instruction

Chairperson
A.O. Hughes

Professors
J.N. Jackson
K.J. Tinkler

Associate professors
H.J. Gayler
J. McNeil
J.P. Meeker
J. Menzies
C.W. Thomson

Assistant professors
A.O. Hughes
A.B. Shaw

General information

Mackenzie Chown complex C322

The department of Geography offers programs leading to BA and BSc degrees at the pass and honors 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 man 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 the environment and man, and a body of related theory and methodology.

At Brock three degree programs are available: human geography, leading to a BA; physical geography, leading to a BSc; and geography, which combines the human and physical sides of the discipline and leads to either a BA or BSc. These programs are described in detail in subsequent sections.

The courses offered by the department of Geography fall into two groups:

Group A: courses which may be taken for BA credit:

1F90	2P02	3F90	3P57	4F60
	2P03	3P01	3P72	4F62
	2P06	3P03	3P73	4F63
	2P07	3P07	3P82	4F67
	2P08	3P40	3P83	4F69
	2P90	3P41	3P84	4F90
	2P91	3P42	3P85	4F99
	2P92	3P43		4P01
	2P94	3P44		4P02

Group B: courses which may be taken for BSc credit:

1F91	2P04	3F90	3P23	4F11
	2P05	3P01	3P24	4F60
	2P07	3P03	3P25	4F90
	2P08	3P07	3P30	4F99
	2P09	3P10	3P31	4P01
	2P94	3P15	3P56	4P02
		3P22	3P83	4P26
				4P27
				4P28
				4P29

Notes:

1. Certain courses fall into both group A and group B, and can be taken for either BA or BSc credit.
2. Providing BA/BSc program requirements and course prerequisites are met, a student may take elective credits from both group A and group B.
3. Students may gain credit for only one of GEOG 3P56(356hc) or GEOG 3P57(357hc).

In most courses there is emphasis on practical work. This entails structured labs and seminars in early years, but

involves progressively more independent work in later years, culminating in an optional honors thesis in year four. Field work features prominently in many courses. Two field courses, GEOG 3P56(356hc) and 3P57(357hc), are held during registration week in early September, with follow-up seminars during term; one of these courses is mandatory for students entering year three. An internship program is available as part of GEOG 4F99 in year 4, enabling students to obtain real-world work experience while still at the University.

Laboratories and equipment are available for work in biogeography, geomorphology, climatology, cartography, surveying, remote sensing, urban, economic and cultural geography. The University map library, containing an extensive collection of maps, atlases and airphotos, is housed within the Geography department.

Bachelor of Arts in Human Geography

Pass program

Seven and one half credits in geography are required, plus MATH 1F92 and two social science credits other than geography

The normal program sequence is as follows:

Year 1

GEOG 1F90; GEOG 1F91 (may be taken in year 2); MATH 1F92; one humanities and one social science context credit.

Year 2

GEOG 2P02, 2P03, 2P06, 2P07, 2P08; one social science credit; one and one half elective credits (to include GEOG 1F91 if not completed in year 1).

Year 3

GEOG 3P57; two and one half year 3 credits in geography from group A;

Geography

two elective credits.

Honors program

Eleven and one half credits in geography are required.

Years 1, 2 and 3

As in pass BA program.

Year 4

GEOG 4F99; two year 4 credits in geography from group A; one credit in geography at year 2 level or above; one elective credit.

Bachelor of Science in Physical Geography

Pass program

Seven and one half credits in geography are required, plus MATH 1P97/1P98, and three science credits from biological sciences, chemistry, computer science, geological sciences, mathematics and physics (excluding ASTR 1F00, BIOL 1F25, GEOL 1F90, GEOL 2P90 and SCIE 1F20). It is recommended that at least one of these be at year 2 level or above.

For majors with specific interest in geomorphology/soils, the following geology courses are recommended as elective credits: GEOL 2P31, 3P52, 3P61, 4P41, 4P42 and 4P61. Note also that GEOL 3P25 may be taken for geography credit as GEOG 3P25.

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, 2P08, 2P09; one science credit; one and one half elective credits (to include GEOG 1F90 if not completed in year 1).

Year 3

GEOG 3P56; two and one half year 3 credits in geography from group B; one science elective credit; one elective credit.

Honors program

Eleven and one half credits in geography are required.

Years 1, 2 and 3

As in pass BSc program

Year 4

GEOG 4F99; two year 4 credits in geography from group B; one credit in geography at year 2 level or above; one elective credit.

Bachelor of Arts in Geography

Pass program

Eight credits in geography are required, plus MATH 1F92 and two social science credits other than geography.

The normal program sequence is as follows:

Year 1

GEOG 1F90, 1F91; MATH 1F92; one humanities and one social science context credit.

Year 2

GEOG 2P07, 2P08; one year 2 credit in geography from group A; one year 2 credit in geography from group B; one social science credit; one elective credit.

Year 3

GEOG 3P57; one and one half year 3 credits in geography from group A; one year 3 credit in geography from group B; two elective credits.

Honors program

Twelve credits in geography are required.

Years 1, 2 and 3

As in pass BA program.

Year 4

GEOG 4F99; two year 4 credits in geography; one credit in geography at year 2 level or above; one elective credit.

Bachelor of Science in Geography

Pass Program

Eight credits in geography are required, plus MATH 1P97/1P98, and three science credits from biological sciences, chemistry, computer science, geological sciences, mathematics and physics (excluding ASTR 1F00, BIOL 1F25, GEOL 1F90, GEOL 2P90 and SCIE 1F20). It is recommended that at least one of these be at 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 2P07, 2P08; one year 2 credit in geography from group A; one year 2 credit in geography from group B; one science credit; one elective credit.

Year 3

GEOG 3P56; one year 3 credit in geography from group A; one and one half year 3 credits in geography from group B; one science credit; one elective credit.

Honors program

Twelve credits in geography are required.

Years 1, 2 and 3

As in pass BSc program

Year 4

GEOG 4F99; two year 4 credits in

geography; one credit in geography at year 2 level or above; one elective credit.

Combined major programs

The department of Geography participates in the following formal combined major programs:

- BSc Geography and Biological Sciences*
- BA Geography and Economics*
- BSc Geography and Geological Sciences
- BA Geography and Urban and Environmental Studies
- BSc Geography and Urban and Environmental Studies

The requirements for the two programs marked with an asterisk (*) are listed in the Biological Sciences and Economics sections of the calendar. The other programs are described below.

Combined major programs involving other disciplines are also possible; students interested in pursuing one of these should consult the chairpersons of Geography and the other department involved.

The minimum geography course requirements for a combined major program are as follows.

BA pass degree

GEOG 1F90; GEOG 2P07, 2P08 (or equivalent); one year 2 credit from group A; GEOG 3P57; one and one half year 3 credits from group A.

BA honors degree

As for pass degree, plus:
GEOG 4F99; one year 4 credit from group A.

BSc pass degree

GEOG 1F91; GEOG 2P07/2P08 (or equivalent); one year 2 credit from group B; GEOG 3P56; one and one half year 3 credits from group B; MATH 1P97, 1P98.

BSc honors degree

As for pass degree, plus:
GEOG 4F99; one year 4 credit from group B.

Notes:

1. MATH 1P97/1P98 are mandatory in all BSc combined major programs.

2. Both the BA and BSc programs require a field course (either GEOG 3P56 or 3P57), held during registration week in early September, with follow-up seminars during term.

BSc Geography and Geology

Pass program

Year 1

GEOG 1F91; GEOL 1F95; MATH 1P97/1P98; one social science and one humanities context credit.

Note: GEOG 1F90 is strongly recommended as a social science context credit.

Year 2

GEOG 2P07, 2P08 (or equivalent); one credit from GEOG 2P04, 2P05, 2P09; GEOL 2P01, 2P21, 2P42; one half credit in geology; COSC 1P91; one elective half credit.

Year 3

GEOG 3P56; one and one half year 3 credits in geography from group B; GEOL 2P31; one and one half credits in geology at year 2 or year 3 level; one science credit from chemistry, computer science, mathematics or physics.

Honors program

Years 1, 2 and 3

As in pass program.

Year 4

GEOG 4F99; one year 4 credit in geography from group B; two credits in geology at year 3 or year 4 level; one elective credit. The courses selected must include either GEOG 4F90 or GEOL 4F90 and at least three credits at the year 4 level.

BA Geography and Urban and Environmental Studies

Pass program

Year 1

GEOG 1F90; UEST 1F90; MATH 1F92 or equivalent; one humanities and one science context elective.

Note: GEOG 1F91 is strongly recommended as a science context credit.

Year 2

GEOG 2P07, 2P08 (or equivalent); one credit from GEOG 2P02, 2P03, 2P06; UEST 2F96, 2F97; one elective credit.

Year 3

GEOG 3P57; one and one half year 3 credits in geography from group A (excluding GEOG 2P90, 2P91, 2P92); one credit from UEST 3V10-3V15, 3V20-3V25 and 3V30-3V35; one year 3 credit in urban and environmental studies (excluding UEST 3V80-3V81); one elective credit.

Honors program

Years 1, 2 and 3

As in pass program.

Year 4

GEOG 4F99; one year 4 credit in geography from group A; UEST 4F90 or 4F95; COSC 1P90 or 1P91 or equivalent; one and one half elective credit. The courses selected cannot include both GEOG 4F90 and UEST 4F90.

BSc Geography and Urban and Environmental Studies

Pass Program

Year 1

GEOG 1F91; UEST 1F90; MATH 1P97/1P98; one humanities context elective; one elective credit.

Year 2

GEOG 2P07, 2P08 (or equivalent); one credit from GEOG 2P04, 2P05, 2P09; UEST 2F96, 2F97; one elective credit.

Geography

Year 3

GEOG 3P56; one and one half year 3 credits in geography from group B; one credit from UEST 3V10-3V15, 3V20-3V25 and 3V30-3V35; one year 3 credit in urban and environmental studies (excluding UEST 3V80-3V81); one elective credit.

Honors program

Years 1, 2 and 3

As in pass program

Year 4

GEOG 4F99; one year 4 credit in geography from group B; UEST 4F90 or 4F95; COSC 1P90 or 1P91 or equivalent: one and one half elective credits. The courses selected cannot include both GEOG 4F90 and UEST 4F90.

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 approach to current issues in economic, urban and cultural geography, including resources, industry and commerce, population and food supplies, and urban and rural landscapes. Lectures, lab/seminar, 3 hours per week.

GEOG 1F91
Principles of physical geography
A study of the interactions of atmosphere, soils, vegetation and landforms occurring at the surface of the earth. The development of natural environments and their impact upon man and his activities. Lectures, lab/seminar, 4 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. Prerequisite: GEOG 1F90(190) or 192 or another year 1 social science credit, or permission of the instructor. Lectures, seminar, 4 hours per week.

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. Prerequisite: GEOG 1F90(190) or 192 or another year 1 social science credit, or permission of the instructor. Lectures, seminar, 3 hours per week.

GEOG 2P04
An introduction to meteorology
A study of 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. Prerequisite: GEOG 1F91(191) or 192, or permission of the instructor. Lectures, lab, 3 hours per week.

GEOG 2P05
The earth's natural landscape
An introduction to the study of geomorphology with an emphasis on basic principles and their application, and on local landforms. Prerequisite: GEOG 1F91(191) or 192, or permission of the instructor. Lectures, lab, field work, 5 hours per week.

GEOG 2P06
Cultural geography
Interactions of culture and technology. Cultural problems in the modern world. Prerequisite: GEOG 1F90(190) or 192, or another year 1 social science credit, or permission of the instructor.

Not open to students with credit in GEOG 358hc. Lectures, lab, 3 hours per week.

GEOG 2P07
Maps and airphotos
Properties and uses of maps and airphotos. Map-making. Introduction to surveying and remote sensing. Prerequisite: GEOG 1F90(190) or 1F91(191) or 192, or GEOL 1F95(195), or permission of the instructor. Lectures, lab, field work, 4 hours per week.

GEOG 2P08
Quantitative methods
An introduction to the basic mathematical structures underlying geographical problems. Coordinate systems for space. Linear equations in up to two independent variables. Non-linear equations: polynomials, power functions, exponential functions. Linearization of non-linear systems for statistical fitting. Weekly exercises emphasize applications to typical problems. Prerequisite: GEOG 1F90(190) or 1F91(191) or 192, or permission of the instructor. Lectures, seminar, 4 hours per week.

GEOG 2P09
Principles of biogeography
Introduction to the principles of biogeography. Autoecological aspects of soils and plants including man's impact at all scales. Study of the patterns of soils and plants and their explanation. Soil and vegetation systems. Prerequisite: GEOG 1F91(191) or 192, or permission of the instructor. Lectures, lab, 3 hours per week.

GEOG 2P90
Geography of western Europe
An introduction to the range and character of European urban and rural landscapes, regional problems and issues. Prerequisite: none. Lectures, seminar, 4 hours per week.

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.

Prerequisite: none.

Lectures, seminar, 4 hours per week.

GEOG 2P92

Geography of the United States

Selected aspects of the regional geography of the United States.

Prerequisite: none.

Lectures, seminar, 4 hours per week.

GEOG 2P94

Environmental problems in the Third World

An examination of interrelationships between physical and human factors and development; natural resource exploitation and sustainable development; man as an agent of change in desertification, deforestation, soil erosion and environmental pollution, and their impacts on climate, the hydrologic cycle and nutrient cycling processes. Selected studies of regions that are marginal in terms of carrying capacity and ecological fragility.

Prerequisite: GEOG 1F90(190) or GEOG 1F91(191), or permission of the instructor.

Lectures, lab, seminar, 4 hours per week.

GEOG 3F90

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.

Prerequisite: completion of all year 1 and 2 requirements in geography, or permission of the instructor.

GEOG 3P01

Surveying

Introduction to the principles and techniques of topographic surveying, emphasizing applications in the earth sciences.

Prerequisite: GEOG 2P07(207hc), or permission of the instructor.

Lectures, lab, field work, 5 hours per week.

GEOG 3P03

Computer cartography

Introduction to the theory and practice of map making by computer, with emphasis on thematic maps. Use of packaged programs on the mainframe and microcomputer. Geographical information systems.

Prerequisite: GEOG 2P07(207hc), or permission of the instructor.

Not open to students with credit in GEOG 302hc.

Lectures, lab, 4 hours per week

GEOG 3P07

Remote sensing and photogrammetry

Theory of remote sensing. Interpretation of remote sensing imagery, including photographic, thermal, radar and satellite imagery, emphasizing applications in the earth sciences. Photogrammetric mapping.

Prerequisite: GEOG 2P07(207hc), or permission of the instructor.

Lectures, lab, 4 hours per week.

GEOG 3P10

Applied climatology

Studies in selected topics from the fields of bioclimatology, climatic change, hydrometeorology, synoptic climatology. Man's impact on the climate will be an important theme.

Prerequisite: GEOG 2P04(204hc), or permission of the instructor.

Lectures, lab, 3 hours per week.

GEOG 3P15

World regional climates

The causes, distribution and environmental impact of major climatic regions. Emphasis on the influence of climate on economic and recreational activities. Treatment of the atmosphere as a source of climatic hazards. Intentional and inadvertent large-scale climatic modification.

Prerequisite: GEOG 2P04(204hc), or permission of the instructor.

Lectures, lab, 3 hours per week.

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 deal with the historical development of the subject, and fluvial, slope and glacial processes.

Prerequisite: GEOG 2P05(205hc) and 2P08(208hc), or permission of the instructor.

Lectures, lab, field work, 4 hours per week.

GEOG 3P23

Advanced and applied geomorphology

The course emphasizes the study in depth of 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.

Prerequisite: GEOG 2P05(205hc), or permission of the instructor.

Lectures, lab, 4 hours per week.

GEOG 3P24

Glacial geomorphology/geology (also offered as GEOL 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.

Prerequisite: GEOG 2P05(205hc), or GEOL 2P42(242hc), or permission of the instructor.

Lectures, lab, field work, 5 hours per week.

GEOG 3P25

Pleistocene geology

(also offered as GEOL 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 environ-

Geography

mental relationships.

Prerequisite: GEOG(GEOL) 3P24(324hc), or permission of the instructor.

Not open to students with credit in GEOL 342hc.

Lectures, lab, 5 hours per week.

GEOG 3P30

Plant geography

Plant succession and mechanics of colonization. Phytosociological characteristics. Island biogeography. Impact of man on plant communities. Vegetation classification and mapping.

Prerequisite: GEOG 2P09(209hc), or permission of instructor.

Lectures, lab, 3 hours per week.

GEOG 3P31

Soil science

Pedogenesis; processes of profile development. Weathering and soil evolution. Major world soil types, soil taxonomy. Soils of Canada.

Prerequisite: GEOG 2P09(209hc), or permission of the instructor.

Lectures, lab, 5 hours per week.

GEOG 3P40

The urban system

The city in space, the Canadian urban system, the determinants of growth and change. City size, central and non-central functions. The urban hierarchy and spatial relationships between cities. Urban-regional policies.

Prerequisite: GEOG 2P03(203hc), or permission of the instructor.

Lectures, seminar, 4 hours per week.

GEOG 3P41

Urban form and structure

The city as space. The range and pattern of urban land uses, and the form and quality of urban environments. The central business district, commercial and industrial land uses, residential areas, and the rural-urban fringe.

Prerequisite: GEOG 2P03(203hc), or permission of the instructor.

Lectures, seminar, 4 hours per week.

GEOG 3P42

The evolution of urban space: the European city

The foundations of urbanization. The changing expression of form, function, and townscape, up to and including the industrial city, based on case studies of selected urban environments.

Prerequisite: GEOG 2P03(203hc), or HIST 1P92/1P93(192hc/193hc), or HIST 1F95(195), or permission of the instructor.

Lectures, seminar, 4 hours per week.

GEOG 3P43

The evolution of urban space: the Canadian city

The process, form and achievement of urban development in Canada, including an appreciation of urbanization in the Niagara Peninsula.

Prerequisite: GEOG 2P03(203hc), or HIST 1P92/1P93(192hc/193hc), or HIST 1F95(195), or permission of the instructor.

Lectures, seminar, 4 hours per week.

GEOG 3P44

Urban social geography

An examination of spatial patterns and social processes involved in the behavior of individuals and public and private institutions in the city. Prerequisite: GEOG 2P03(203hc), or permission of the instructor.

Lectures, seminar, 4 hours per week.

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 should contact the chairperson by April of the preceding academic year.

Prerequisite: three credits in geography from group B, or permission of the department.

Not open to students with 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 should contact the chairperson by April of the preceding academic year.

Prerequisite: three credits in geography from group A, or permission of the department.

Not open to students with credit in GEOG 359hc.

GEOG 3P72

Industrial geography

The analysis of the spatial patterns of manufacturing industry and the processes which generate those patterns. The study of the locational and structural components of industrial geography.

Prerequisite: GEOG 2P02(202hc), or permission of the instructor.

Not open to students with credit in GEOG 370hc or 371hc.

Lectures, seminar, 4 hours per week.

GEOG 3P73

The geography of regional disparity

The study of the 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.

Prerequisite: GEOG 2P02(202hc), or permission of the instructor.

Not open to students with credit in GEOG 370hc or 371hc.

Lectures, seminar, 4 hours per week.

GEOG 3P82

Geography of recreational resources

A survey of the geographical aspects of recreation including the pattern of recreational activities as well as the spatial implications of factors affecting the use and development of resources

for recreation.
Prerequisite: GEOG 2P02(202hc), or 2P03(203hc), or permission of the instructor.
Lectures, seminar, 4 hours per week.

GEOG 3P83
Geography of water resources
A survey of the 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.
Prerequisite: GEOG 2P02/2P03 (202hc/203hc), or 2P04/2P05 (204hc/205hc), or permission of the instructor.
Lectures, seminar, 4 hours per week.

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.
Prerequisite: GEOG 2P06(206hc), or POLI 1F90(190), or permission of the instructor.
Lectures, seminar, 4 hours per week.

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.
Prerequisite: GEOG 2P06(206hc), or permission of the instructor.
Lectures, lab, 4 hours per week.

GEOG 4F11
Advanced climatology
A course combining micro-climatological investigations in the field with guided reading and discussion of important climatological issues and problems.
Prerequisite: one credit in climatology,

and second class honors standing in geography; or permission of the instructor
Seminars, lab, field work, 3 hours per week.

GEOG 4F60
Resource analysis
Lectures and seminars on the application of analytical techniques to spatial problems in resource evaluation and development. Topical emphasis will be in the fields of water and outdoor recreation resources.
Prerequisite: GEOG 3P82(382hc) or 3P83(383hc), and second class honors standing in geography; or permission of the instructor.
Seminars, lab, 3 hours per week.

GEOG 4F62
Advanced population geography and demography
Research themes in population geography and demography with practical applications using Canadian problems.
Prerequisite: GEOG 3P85(385hc), and second class honors standing in geography; or permission of the instructor.
Seminars, 3 hours per week.

GEOG 4F63
Applied urban geography
Students, individually or collectively, will examine a selected spatial example of urbanization, emphasizing either the process of evolution and/or details of modern character. Background reading and field investigation are required.
Prerequisite: one year 3 credit in urban geography, and second class honors standing in geography; or permission of the instructor.
Seminars, 3 hours per week.

GEOG 4F67
Research themes in industrial geography
The study of selected topics and research themes in industrial geography.
Prerequisite: GEOG 3P70(370hc) or 3P71(371hc), and second class honors standing in geography; or permission of the instructor.
Seminars, 3 hours per week.

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.
Prerequisite: one year 3 credit in urban geography, and second class honors standing in geography; or permission of the instructor.
Seminars, 3 hours per week.

GEOG 4F90
Honors thesis
An individual research project carried out at the discretion of the department and under the direction of a faculty adviser. The course is 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.
Prerequisite: second class honors standing in geography, and permission of the department.

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.
Prerequisite: completion of year 3 geography requirements with second class honors standing.
Seminars, lab, 8 hours per week for 15 weeks.

GEOG 4P01
Cartographic production and design
The map as a medium of communication. Advanced aspects of map design. The preparation of maps for four-color reproduction. Compilation, scribing, typesetting, reprographic operations, proofing, printing.
Prerequisite: GEOG 2P07(207hc), and

Geography

second class honors standing in geography; or permission of the instructor.

Not open to students with credit in GEOG 302hc or 468.

Lectures, lab, 4 hours per week.

GEOG 4P02

Topographic science

The independent study of selected topics in surveying, remote sensing, photogrammetry and cartography. Prerequisite: GEOG 3P01(301hc) or 3P07(307hc), and second class honors standing in geography; or permission of the instructor.

Not open to students with credit in GEOG 468.

Labs, field work, 3 hours per week.

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.

Prerequisite: GEOG 3P22(322hc), and either GEOG 3P23(323hc) or 3P24(324hc), and second class honors standing in geography; or permission of the instructor.

Not open to students with credit in GEOG 423.

Seminars, lab, field work, 3 hours per week.

GEOG 4P27

Research themes in fluvial geomorphology II

A continuation of GEOG 4P26(426hc) which will emphasize the morphometric analysis of areas from published maps, computer simulation of river systems, and a continued survey of relevant literature.

Prerequisite: GEOG 4P26(426hc), and second class honors standing in geography; or permission of the instructor.

Not open to students with credit in GEOG 423.

Seminars, lab, 3 hours per week.

GEOG 4P28

Advanced glacial sedimentology (Also offered as GEOL 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.

Prerequisite: GEOG(GEOL) 3P24(324hc), and second class honors standing in geography or geology; or permission of the instructor.

Not open to students with credit in GEOG 421 or GEOL 425.

Lectures, lab, field work, 5 hours per week.

GEOG 4P29

Research themes in glacial geomorphology

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 analyses.

Prerequisite: GEOG(GEOL) 4P28(428hc), and second class honors standing in geography or geology; or permission of the instructor.

Not open to students with credit in GEOG 421 or GEOL 425.

Lectures, lab, field work, 5 hours per week.

Geological Sciences

Officers of instruction

Chairperson

J.J. Flint

Professors

W.T. Jolly

J. Terasmae

Associate professors

J. Arkani-Hamed

U. Brand

J.J. Flint

S.J. Haynes

J. Menzies

Assistant professors

R.J. Cheel

G.C. Finn

Sessional lecturer

E.B. Grant

Honorary research associate

A-S. Edhorn

General information

Mackenzie Chown complex D410

The department of Geological Sciences offers a BSc in geology designed to provide students with a broad background leading to specialization for career opportunities in geology or for admission to advanced degree studies. Combined programs with other departments are also available. The field of geology 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 utilization 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 while extended field trips are conducted for students in each year of the program. 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 3 and 4 electives: GEOL 3P24, 3P25, 3P61, 3P82, 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: GEOL 3P94, 3P98, 4P22, 4P26, 4P52.

Specializations are also available in carbonate geochemistry, petroleum geology, Precambrian geology, geophysics, paleontology or stratigraphy. Those interested should consult the department for suggested course programs in these disciplines.

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 and fluorometric analysis. These are supported by rock specimen preparation and drafting facilities, dark rooms and cold rooms. The department shares the facilities of electronic, woodworking and glassblowing shops with other departments. In addition to departmental minicomputers, the department has access to the University and library computers through remote terminals.

Pass program

Year 1

GEOL 1F95; MATH 1P97/1P98; one humanities and one social science context credit; one science credit (see Note 1.).

Year 2

GEOL 2P01, 2P21, 2P22, 2P31, 2P32, 2P42; CHEM 1F93 or 1F85; COSC 1P91; one half credit elective (see Notes 2. and 3.).

Year 3

GEOL 3P21, 3P31, 3P71; two and one half credits from GEOL 3P24, 3P25, 3P52, 3P61, 3P82, 3P94, 3P95, 3P98, 3P99; one elective credit (see Notes 2. and 3.).

Notes:

1. The unspecified science elective credit may be taken from mathematics, biology, chemistry, physics or computer science (except MATH 1F60, BIOL 1F25, SCIE 1F20 or ASTR 1F00).
2. Students interested in pursuing a concentration in geochemistry are strongly advised to take additional chemistry courses.
3. The following courses are given in alternate years only: GEOL 3P61, 4P61.

Students should plan their programs accordingly and are advised to refer to the applicable term timetable for details.

Honors program

Years 1, 2 and 3

As in pass program. GEOL 3P99, normally taken at the end of year 3, is required for entry into year 4.

Year 4

Admission to the year 4 program.

GEOL 4F90 and 4P02; two and one

Geological Sciences

half credits from year 4 geology or from the remaining elective geology credits offered in year 3; one elective credit.

To qualify for an honors degree, students must complete a minimum of three credits numbered 3(*alpha*)90 or above.

Combined major pass programs

The department of Geological Sciences, in co-operation with other departments, offers combined major programs in geology 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:

Geology and Biology

Pass program

Year 1

BIOL 1F90; GEOL 1F95; MATH 1P97/1P98; CHEM 1F93 or CHEM 1F85 or PHYS 1F20; one humanities or social science context credit.

Year 2

Two credits from BIOL 2F01, 2F03, 2P90, 2P91, 2P93, 2P98; GEOL 2P31/2P32; one credit from year 2 geology; the context credit not taken in Year 1.

Year 3

Two year 3 biology credits; two year 2 or 3 geology credits; one elective credit in biology or geology.

University requirements for a pass degree stipulate that a minimum of three credits must be numbered 2(*alpha*) 90 or above.

Honors program

Years 1, 2 and 3

As in pass program. GEOL 3P99 or BIOL 3P71 is required for entry to year 4.

Year 4

One and one half credits in biology at year 3 or year 4 level; one and one half credits in geology at year 3 or year 4 level; either BIOL 4F90/4F91, or 4F92 plus one elective credit, or GEOL 4F90 plus one elective credit.

To qualify for an honors degree, students must complete a minimum of three credits numbered 3(*alpha*) 90 or above.

Geology and Chemistry

Pass program

Year 1

CHEM 1F93 or 1F85; PHYS 1F90; GEOL 1F95; MATH 1P93/1P94; one humanities or social science context credit.

Year 2

CHEM 2F10; CHEM 2P30/2P40; GEOL 2P21/2P22; one year 2 geology credit; the context credit not taken in year 1.

Year 3

CHEM 2P20; CHEM 3P40; one credit from CHEM 2P21, 2P41, 3P30, 3P31, 3P60; GEOL 3P31; one and one half credits in geology at year 2 or 3 level; one chemistry or geology elective credit.

To qualify for a pass degree, students must complete a minimum of three credits numbered 2(*alpha*) 90 or above.

Honors program

Years 1, 2 and 3

As in pass program. GEOL 3P99 is normally required at the end of year 3 but may be taken at the end of year 2 with permission of the department.

Year 4

One credit in chemistry at year 3 or 4 level; one credit in geology at year 3 or 4 level; either CHEM 4F90 and CHEM 4F91 or GEOL 4F90 and one credit in geology at year 3 or 4 level; one

elective credit.

To qualify for an honors degree, students must complete a minimum of three credits numbered 3(*alpha*)90 or above.

Geology and Physics

Pass program

Year 1

GEOL 1F95; MATH 1P93/1P94; PHYS 1F90 (preferred) or PHYS 1F20; one humanities and one social science context credit.

Year 2

GEOL 2P01; one and one half credits in geology at year 2 level; MATH 2F95; two credits from PHYS 2P20/2P21, 2P30/2P31 or 2P41/2P42.

Year 3

Two geology credits at year 2 or 3 level; one year 2 physics credit and one year 3 physics credit; one elective credit in geology or physics.

University regulations for a pass degree require a minimum of three credits numbered 2(*alpha*) 90 or above.

Honors program

Years 1, 2 and 3

As in pass program. GEOL 3P99 is normally required at the end of year 3 but may be taken at the end of year 2 with permission of the department.

Year 4

GEOL 4F90 or PHYS 4F90; one year 3 or 4 geology credit; one year 3 physics credit or one credit from PHYS 3P20, 4P41, 4P70, 4P71; one year 3 or 4 geology or physics credit; one elective credit.

To qualify for an honors degree, students must complete a minimum of three credits numbered 3(*alpha*)90 or above.

Master of Science (MSc) program

Candidates with either an honors or pass BSc degree in geological 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 following courses are available:

GEOL 5F90
MSc thesis

GEOL 5P30
Structural geology

GEOL 5P31
Tectonics

GEOL 5P32
Applied geophysics

GEOL 5P35
Quaternary palynology

GEOL 5P40
Quaternary geochronology

GEOL 5P41
Glaciology

GEOL 5P45
Advanced palaeoecology

GEOL 5P50

Sedimentary environments

GEOL 5P51
5P51 Planetology

GEOL 5P54
Physics and chemistry of magmas

GEOL 5P55
Volcanology

GEOL 5P56
Ore genesis

GEOL 5P58
Chemical sedimentology

GEOL 5P59
Carbonate geochemistry

GEOL 5P60
Advanced surface hydrology

GEOL 5P61
Quantitative methods in geology

GEOL 5P70
Fluvial geology

GEOL 5P71
Advanced paleolimnology

GEOL 5P75
Limnogeology

GEOL 5P85
Pleistocene geology

GEOL 5V90-5V99
Selected topics in contemporary geology

For details, see graduate calendar or consult the chairperson of the department.

Description of courses

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

GEOL 1F90
Introduction to geology
This course is intended for the non-science student; its aim is to provide an

introduction to geological processes while demonstrating their relevance to man's utilization of the earth's resources and appreciation of the environment. Lecture topics will include origin of the earth; volcanoes, earthquakes, geologic hazards; environmental geology; origin of life and evolution; the fossil record; mineral and energy resources.
Lectures, 2 hours per week; labs and local field trips, 1 to 2 hours per week.

GEOL 1F95

Introduction to earth science

A study of 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; paleontology and evolution, concepts of geologic time, elements of stratigraphy.

Prerequisite: any two of biology, chemistry, geology, mathematics or physics beyond grade 11, or equivalent.
Lectures, lab and local field trips, 5 hours per week.

GEOL 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.

Prerequisite: GEOL 1F95(195).
Lectures, lab, 5 hours per week.

GEOL 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.

Prerequisite: GEOL 1F95(195).
Not open to students with credit in GEOL 210, 211hc, 212hc.
Lectures, lab, 5 hours per week.

GEOL 2P22

Optical mineralogy

Internal structure of crystals. The petrographic microscope and its

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usefulness in the identification of and familiarization with major rock forming minerals, as discrete grains and in thin section.

Prerequisite: GEOL 2P21(221hc).
Lectures, lab, 5 hours per week.

GEOL 2P31

Clastic sedimentology

Weathering and its products, sedimentary textures, sediment transport, sedimentary structures, paleocurrent analysis, sediment gravity flows, biogenic structures, sandstone classification and the sedimentology of shales. Laboratories illustrating common techniques in studying sediments and sedimentary rocks.

Prerequisite: GEOL 1F95(195).
Lectures, lab and local field trips, 5 hours per week.

GEOL 2P32

Paleontology

Principles of paleontology; classification, morphology, paleoecology, preservation and alteration of fossils; evolution of invertebrates and plants through geological time.

Prerequisites: GEOL 1F95(195).
Lectures, lab and local field trips, 5 hours per week.

GEOL 2P42

Physical geology

Temporal evolution and denudation of land masses in relation to tectonic, sedimentologic and climatic changes; origin and identification of specific landforms, their mathematical and topological evolution; labs will include instruction in surveying techniques.

Prerequisite: GEOL 2P01(201hc).
Lectures, lab and local field trips, 5 hours per week.

GEOL 2P90

Geology and society

Relationship of man's activities to his physical environment. Pollution, energy, hazards and catastrophes.

Prerequisite: GEOL 1F90(190) or 1F95(195) and permission of the instructor.

This course cannot be used as a geology elective credit towards a

degree in geological sciences. It is primarily designed for students who do not intend to major in geology.

Lectures, seminars, field trips to be announced.

GEOL 2P91

Planetary geology

Origin and evolution of the solar system; geologic, tectonic, atmospheric and morphologic comparison of earth, the planets, and satellites of the solar system.

Prerequisite: GEOL 1F90(190) or 1F95(195) or permission of the instructor.

Not open to students with credit in GEOL 431hc.

May not be used as a science elective.
Lectures, lab, 5 hours per week.

GEOL 3P21

Petrography and petrology

The study of igneous, metamorphic and sedimentary rocks in thin section; their composition, texture, structures, origin and classification.

Prerequisite: GEOL 2P22(222hc); CHEM 1F93(193) or 1F85(185).
Lectures, lab, 5 hours per week.

GEOL 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.

Prerequisite: GEOL 2P42(242hc) (for students in the Geology program).
Not open to students with credit in GEOL 341hc.

Lectures, lab, field work, 5 hours per week.

GEOL 3P25

Pleistocene geology

(also offered as GEOG 3P25)
Glaciations in the geological record; causes of glaciations; sea level and climatic changes; isostatic crustal movements; Quaternary stratigraphy and correlation of glacial and non-glacial events; economic and environmental relationships.

Prerequisite: GEOL(GEOG) 3P24(324hc).

Not open to students with credit in GEOL 342hc.

Lectures, lab, 5 hours per week.

GEOL 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.

Prerequisite: CHEM 1P93(193) or 1P85(185).

Not open to students with credit in GEOL 312hc.

Students must supply their own safety equipment.

Lectures, lab, 5 hours per week.

GEOL 3P52

Carbonate sedimentology

Petrography of carbonate grains; skeletal structures and chemistry; recent carbonate environments; evolution of carbonate mounds; chemical theory of carbonate grains; textural, structural and chemical limestone diagenesis; dolomitisation, silification and pyritisation of carbonate grains.

Prerequisite: GEOL 3P21(321hc) or permission of the instructor.

Lectures, lab, 5 hours per week.

GEOL 3P61

Groundwater geology

Occurrence, movement, exploration and exploitation of groundwater including the study of groundwater flow and principles of well hydraulics.

Prerequisites: GEOL 1F95(195), MATH 1P97(197hc) or equivalent.

Lectures, lab, 5 hours per week.

GEOL 3P71

Stratigraphy

History of stratigraphy and the geologic time scale; stratigraphic code and classification; principles of lithostratigraphy, biostratigraphy and seismic stratigraphy; classification of sedimentary basins on the basis of their tectonic

setting with Canadian examples.
Correlation project.
Prerequisites: GEOL 2P01(201hc),
2P31(231hc), 2P32(232hc).
Lectures, labs and local field trips, 5
hours per week.

GEOL 3P82

Photogeology

Principles of analysis and geologic
interpretation of aerial photography,
including remote sensing data from
airborne and satellite imagery.
Prerequisite: third year standing.
Lectures, labs, 5 hours per week.

GEOL 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.
Prerequisite: GEOL 3P21(321hc)).
Not open to students with credit in
GEOL 421hc or 326hc.
Lectures, labs, 5 hours per week.

GEOL 3P95

Special topics in geology

A lecture/seminar course in which a
student may explore areas not repre-
sented 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.
Prerequisite: A minimum overall
average of B (75) in geology; permis-
sion of the chairperson. This course can
be taken only once.

GEOL 3P98

Economic geology

Principles and processes of the forma-
tion of metallic ore deposits, ore
microscopy and ore petrology, metallo-
geny and theories of metallogenesis.
Prerequisite: GEOL 3P21(321hc);
3P12(312hc) or 3P31(331hc) recom-
mended.
Not open to students with credit in
GEOL 362hc.
Lectures, labs, seminars, 5 hours per
week.

GEOL 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 stratigra-
phic sections, preparing geologic maps
and reports. The field area, situated in
northern Ontario, consists of Archaean,
Proterozoic and Paleozoic lithologies.
Registrants are expected to defray the
cost of travel, accommodation and
other expenses.
Prerequisites: completion of all year 1
and year 2 requirements in geology and
permission of the department.

GEOL 4F90

Research and thesis

Directed research on geological
problems. A thesis incorporating the
results of an approved investigation is
required and will be critically exam-
ined. Three copies of the thesis must be
submitted and approved in final typed
form by March 15th. This course is
required of all honors students in
geology.
Prerequisites: admission to the year 4
honors program.

GEOL 4P02

Geology of Canada

Characteristics of the major geologic
subdivisions of Canada. Provinces of
the Canadian Shield; Innuitian,
Appalachian and Cordilleran orogenic
belts; Hudson, Interior, Arctic and St.
Lawrence platforms; Pleistocene
history. Particular emphasis will be
placed on the nature of crustal pro-
cesses and of the record through time.
Prerequisite: open only to year 4
honors students in geological sciences.
Lectures, 2 hours per week, seminars, 2
hours per week.

GEOL 4P03

Applied geophysics

Principles of magnetic, electrical,
radioactive, gravity and seismic
geophysical methods and their applica-
tion.
Prerequisite: GEOL 2P42(242hc),
PHYS 1F20(120).
Lectures, 2 hours per week plus lab/
seminar, 3 hours per week.

GEOL 4P10

Sedimentary facies models

Introduction to the concepts of facies
and facies models as tools for the
interpretation of clastic sedimentary
depositional environments. This course
reviews the characteristics of all major
non-marine and marine environments
of deposition with examples from the
modern and ancient record.
Prerequisite: GEOL 2P31(231hc).
Lectures, seminar, 5 hours per week.

GEOL 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.
Prerequisite: GEOL 3P12(312hc) or
3P31(331hc) and permission of
instructor.
Not open to students with credit in
GEOL 411hc.
Lectures, labs, 5 hours per week.

GEOL 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.
Prerequisite: GEOL 3P21(321hc).
Lectures, labs, 5 hours per week.

GEOL 4P23

Advanced paleontology

Growth of individuals, aspects of
populations, nature of species and
higher groupings of taxa. Paleobioge-
ography, paleoecology, evolution;
applied micro-paleontology.
Prerequisite: GEOL 2P32(232hc).
Not open to students with credit in
GEOL 301hc.
Lectures, labs, 5 hours per week.

GEOL 4P26

Tectonics

Presentation of the hypothesis of plate
tectonics and its application to all

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aspects of geology. Description of some major orogenic belts in terms of plate tectonics.

Prerequisites: GEOL 2P01(201hc), 2P31(231hc), 3P21(321hc).

Not open to students with credit in GEOL 372hc.

Lectures, seminars, labs, 5 hours per week.

GEOL 4P28

Advanced glacial geology

(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.

Prerequisite: GEOL(GEOG) 3P24(324hc) and GEOL 2P31(231hc).

Not open to students with credit in GEOG 421 or GEOL 425.

Lectures, labs, local field trips, 5 hours per week.

GEOL 4P41

Paleoecology

Physical and biological environments; principles of ecosystems; reconstruction of past environments; climatic changes.

Prerequisite: GEOL 2P32(232hc).

Lectures, seminars, labs, 5 hours per week.

GEOL 4P42

Geochronology

Theory and techniques for dating of geological materials, with emphasis on quaternary geology; radiocarbon dating, palynology, dendrochronology, varve chronology, fission tracks, thermoluminescence, palcomagnetic methods, and principles of commonly used other radiometric methods (potassium-argon, uranium-lead, etc.).

Prerequisite: GEOL 3P25(325hc).

Lectures, labs, local field trips, 5 hours per week.

GEOL 4P52

Advanced economic geology

Non-metallic mineral deposits, industrial minerals; structural control, exploitation of ore deposits, grade and tonnage calculation.

Prerequisite: GEOL 3P98(362hc).

Lectures, labs, seminars, field trips, 5 hours per week.

GEOL 4P61

Surface hydrology

Distribution and variation of run-off, recurrence of floods and droughts; fluvial processes and sediment transport; hydrologic and water management techniques.

Prerequisites: GEOL 2P31(231hc), 2P42(242hc), or permission of the instructor.

Lectures, labs, local field trips, 5 hours per week.

Germanic and Slavic Studies

Officers of instruction

Chairperson

H. Schutz
D.C. MacRae (after July 1, 1988)

German section

Professors

C.R. Owen
H. Schutz

Associate professors

D.C. MacRae
J.A. Michielsen

Visiting Assistant Professor

B.W.K. Joe

Russian section

Associate professors

J.A. Frankel
C. Hollosi

General information

Schmon tower 1119

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 course credit for a three months stay in Germany under approved conditions.

Notes:

1. Courses offered in English:
GERM 1F96
GERM 1P93
GERM 1P94
RUSS 1F95
RUSS 2F10
RUSS 3P94
RUSS 3P95
2. Language courses numbered 1F00 may not normally be taken by students who have grade 13 standing or its equivalent in the language.
3. Students registering for German or Russian 1F90 will normally have high school standing in the language or equivalent (GERM 1F00 or RUSS 1F00) or permission of the department.

4. German courses numbered 3(alpha) 00 and up are open to students in years 3 and 4 German and to others by special permission of the department. Russian courses numbered 2(alpha) 90 and up 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, 1F90; GERM 1F00, 1F90, 2F00, 3F99, 4F10; RUSS 1F00, 1F90, 2F97, 3F97.

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.

1988/89 course offerings:
(Trent University course numbers and titles)

GERM 200 (Trent)	Modern literature and Language
GERM 210 (Trent)	18th century literature and language
GERM 231 (Trent)	German civilization

A senior half course at the year 3 level and/or further courses arranged on an individual basis with the University of

Germanic and Slavic Studies

Freiburg and the resident director.

Pass program in one language

German

Seven German credits are required. Students who intend to pursue courses in German literature are strongly urged to consider one or more of: Classics 1P91 (Greek civilization), Classics 1P92 (Roman civilization), Classics 1P95 (Greek myths and religions), Classics 1P97 (Roman religions and myths) as a supplement to their studies in German literature.

Year 1

GERM 1F00 or 1F90 (see Notes 2. and 3. above); GERM 1P93/1P94 or 1F96; one science and one social science context credit; one elective credit.

Second language requirement for Germanic and Slavic studies majors

Majors in Germanic and Slavic studies are required to complete a 1F90 level credit in another language or DRAM 1F93 or ENGL 1F91.

Year 2

(i) Students from GERM 1F00: GERM 1F90, 2F00; three elective credits.
(ii) Students from GERM 1F90: GERM 2F00, 2P11/2P12; three elective credits.

Year 3

Three year 3 or year 4 German credits; two elective credits (see German area studies below for possible choices). Students are strongly urged to enrol in GERM 3F99 when available.

Russian

Seven Russian credits are required.

Year 1

RUSS 1F00 or 1F90 (see Notes 2. and 3. above); RUSS 1F95; one science and one social science context credit; one elective credit.

Second language requirement for Germanic and Slavic studies majors

Majors in Germanic and Slavic studies are required to complete a 1F90 level credit in another language or DRAM 1F93 or ENGL 1F91.

Year 2

(i) Students from RUSS 1F00: RUSS 1F90, 2P12/2P13; three elective credits.
(ii) Students from RUSS 1F90: RUSS 2F97; 2P12/2P13; two elective credits.

Year 3

Three year 3 or year 4 Russian credits; two full elective credits (see Russian area studies below for possible choices). Students are strongly urged to enrol in RUSS 3F97.

Pass program in two languages or combined major

Applicable to all languages. At least five credits in each area must be taken.

Students who intend to pursue courses in German literature are strongly urged to consider one or more of Classics 1P91 (Greek civilization), Classics 1P92 (Roman civilization), Classics 1P95 (Greek myths and religions), Classics 1P97 (Roman religions and myths) as a supplement to their studies in German literature.

Year 1

One credit in language A; one credit in language B; one science and one social science context credit; one elective credit (GERM 1P93/1P94 or RUSS 1F95 recommended).

Second language requirement for Germanic and Slavic studies majors

Majors in Germanic and Slavic studies are required to complete a 1F90 level credit in another language or DRAM 1F93 or ENGL 1F91.

Year 2

Two credits in language A; two credits in language B; one elective credit (GERM 1P93/1P94 or RUSS 1F95

recommended if not taken previously).

Year 3

Two credits in language A; two credits in language B; one elective credit. All pass programs must contain a minimum of three credits numbered 2(alpha) 90 or above.

Honors program in German

At least ten German credits are required.

Years 1, 2, and 3

As in pass program.

Year 4

Three year 3 or year 4 level German credits not taken in year 3; two elective credits (see German area studies below for possible choices). All honors programs must contain a minimum of three credits numbered 3(alpha) 80 or above.

Honors program in two languages or combined major

Applicable to all languages. Seven credits must be taken in each area.

Years 1, 2, and 3

As in pass program.

Year 4

Two credits in language A; two credits in language B; one elective credit. All honors programs must contain a minimum of three credits numbered 3(alpha) 80 or above.

German area studies

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 coordinated 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, Fine Arts, Geography, German, History, Philosophy, Politics, Psychology.

Responsibility for the program rests with the chairperson 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, fine arts, 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).

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.

Second language requirement for Germanic and Slavic studies majors
Majors in Germanic and Slavic studies are required to complete a 1F90 level credit in another language or DRAM 1F93 or ENGL 1F91.

Optional opportunity: three months in Germany, studying, working, and travelling. A half credit, GERM 3P98, will be awarded upon receipt of a satisfactory report from the employer involved.

Honors program

Ten credits in German language and literature; nine credits normally chosen from at least three of history, philosophy, politics, classics, English, fine arts, geography, psychology, and linguistics; one science context credit. All honors programs must contain a minimum of three credits numbered 3(alpha) 80 or above.

Optional opportunity: three months in Germany, studying, working, and travelling. One half credit, GERM 3P98, will be awarded upon receipt of a satisfactory report from the employer involved.

This may be repeated for a further half credit, GERM 4P98.

Russian area studies

In order to provide students with a wider range of studies, the department offers specialized courses of study in Russian language and literature and suggests courses in the following areas: classics, economics, English, fine arts, history, philosophy, politics, psychology, sociology.

There are various approaches to this program:

(a) a humanities orientation, consisting of courses in classics, English, fine arts, 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 the related areas; one science context credit. All

pass programs must contain the equivalent of at least three credits numbered 2(alpha) 90 or above.

Second language requirement for Germanic and Slavic studies majors
Majors in Germanic and Slavic studies are required to complete a 1F90 level credit in another language or DRAM 1F93 or ENGL 1F91.

Description of courses

Abbreviations:

DUTC	Dutch
GERM	German
LING	Linguistics
RUSS	Russian

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.

DUTC 1F90

Intermediate Dutch

Conversational and written language skills. Introduction to Dutch culture and 20th century literature. Prerequisite: DUTC 1F00(100) or permission of the department.

GERM 1F00

Language (introductory)

Learning of basic skills, conversational patterns, reading ability. Emphasis is on the spoken language, language/computer laboratory, films, records, tapes. Language/computer laboratory, 4 hours per week.

GERM 1F90

Language and literature (intermediate I)

Intermediate level. Conversational and written language skills. Introduction to 20th century German literature.

Germanic and Slavic Studies

Language/computer laboratory, films, tapes, recordings.
Lectures and language/diagonal laboratory, 4 hours per week.

GERM 1F96

Culture and civilization of Central Europe II

(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, philosophical, political and sociological theses and their implementation or failure. From the Reformation to the Post WWII period.

Not open to students with credit in GERM 195.

Lectures, 3 hours per week.

GERM 1P93

Culture and civilization of central Europe: from the prehistoric to the Carolingian period

(given in English)

(also offered as CLAS 1P93)

This survey of 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.

Not open to students with credit in GERM 195.

Lectures, 3 hours per week.

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 Counterreformation. An illustrated survey of the arts, architecture and literature.

Not open to students with credit in GERM 195.

Lectures, 3 hours per week.

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/computer laboratory, 3 hours per week.

GERM 2P11

German literature of the 19th century from Goethe to Hauptmann

Short prose works by such authors as Kleist, Hoffmann, Eichendorff, Storm and Hauptmann will be examined as examples of romanticism, poetic realism and naturalism.

Not open to students with credit in GERM 210.

Lectures, 3 hours per week.

GERM 2P12

German literature of the 20th century from Mann to Böll

Authors to be studied include Kafka, Dürrenmatt, Kaschnitz and Lenz. The course touches on the political and literary issues of the 20th century. Prerequisite: GERM 2P11(211hc).

Not open to students with credit in GERM 210.

Lectures, 3 hours per week.

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(190), 2F00(200) or 2P11/2P12(211hc/212hc), or their equivalent, 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.

Prerequisite: GERM 2F00(200) or equivalent or departmental permission. Lectures, language lab, 3 hours per week.

GERM 3P81

Mediaeval German literature I

The principles of Middle High German

grammar and an introduction to the lyric poets of Mediaeval Germany from 1050.

Prerequisite: at least three credits from among GERM 1F90(1F90), 1P93/1P94 (193hc/194hc), 2F00(200), 2P11/2P12 (211hc/212hc) or departmental permission.

May be taken as a third or fourth year credit.

Not open to students with credit in GERM 391.

Lectures, 3 hours per week.

GERM 3P82

Mediaeval German literature II

An introduction to the history of the German language and the Mediaeval epic from 1050.

Prerequisite: GERM 3P81(381hc) or departmental permission.

May be taken as a third or fourth year credit.

Not open to students with credit in GERM 391.

Lectures, 3 hours per week.

GERM 3P83

Baroque to Sturm und Drang

Literature and literary theory from the Baroque period to Storm and Stress.

This course deals with the dramatic literature and criticism of the 17th and 18th centuries from Opitz to Goethe.

Prerequisite: GERM 2F00(200) or equivalent or departmental permission. May be taken as a third or fourth year credit.

Not open to students with credit in GERM 393.

Lectures, 3 hours per week.

GERM 3P84

Sturm und Drang to early classicism

Literature of the 18th century from the period of Storm and Stress to early classicism: drama, prose and essays of Goethe and Schiller, especially Goethe's *Faust I*.

Prerequisite: GERM 2F00(200) or equivalent or departmental permission. May be taken as a third or fourth year credit.

Not open to students with credit in GERM 393.

Lectures, 3 hours per week.

GERM 3P85

19th century Romantic literature

Early Romantic prose, poetry and drama with special emphasis on the works of Novalis, Wackenroder, Tieck and Kleist. Critical theory of the Romantic movement.

Prerequisite: GERM 2P11/2P12(211hc/212hc) or equivalent or departmental permission.

May be taken as a third or fourth year credit.

Not open to students with credit in GERM 395.

Lectures, 3 hours per week.

GERM 3P86

Biedermeier, Junges Deutschland and Vormärz

Representative works from the late Romantic period and works by Büchner, Heine, Mörike, Grillparzer and Stifter.

Prerequisite: GERM 2P11/2P12(211hc/212hc) or equivalent or departmental permission.

May be taken as a third or fourth year credit.

Not open to students with credit in GERM 395.

Lectures, 3 hours per week.

GERM 3P87

The prose of Realism

Narrative fiction from Realism to Naturalism. Works by Fontane, Keller, Storm, Ludwig, Meyer and Hauptmann.

Prerequisite: GERM 2P11/2P12(211hc/212hc) or equivalent or departmental permission.

May be taken as a third or fourth year credit.

Not open to students with credit in GERM 392.

Lectures, 3 hours per week.

GERM 3P88

19th century drama and poetry

Representative dramas by Hebbel, Hauptmann, Schnitzler and Wedekind. Poetry from the *Epigonen* to the Impressionists.

Prerequisite: GERM 2P11/2P12(211hc/212hc) or equivalent or departmental permission.

May be taken as a third or fourth year credit.

Not open to students with credit in GERM 392.

Lectures, 3 hours per week.

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 4F10

Advanced language study II

The aim of the course is to develop 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.

Prerequisite: GERM 2F00(200) or equivalent or departmental permission.

Not open to students with credit in GERM 499.

Open to year 3 and 4 students only.

Language/computer laboratory, 3 hours per week.

GERM 4F15

Tutorial

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 chairperson.

3 hours per week.

GERM 4P00

German classicism I

Classical texts and philosophical essays: Schiller.

Prerequisite: GERM 2F00 and normally GERM 3P83/3P84(383hc/384hc) or equivalent or departmental permission.

Not open to students with credit in GERM 402.

Lectures, 3 hours per week.

GERM 4P01

German classicism II

The classical plays of Goethe,

especially *Faust II*.

Prerequisite: GERM 4P00(401hc) or departmental permission.

Not open to students with credit in GERM 402.

Lectures, 3 hours per week.

GERM 4P05

German literature of the early 20th century

The traditions of the 19th century conflict with the revolutionary ideologies of the 20th: experiments in form and content express social upheavals, culminating in WW I and the attempt at a democratic society in Germany. Works by such writers as T. Mann, Hesse, Remarque and Kafka will be studied.

Prerequisite: the equivalent of at least four full courses from years 1, 2 and 3, including GERM 2P11/2P12(211hc/212hc).

Not open to students with credit in GERM 404.

Lectures, 3 hours per week.

GERM 4P06

German literature from the 1920s to 1945

The collapse of Germany's economy brought in its wake the rise of totalitarianism. The nebulous concepts of race and superiority fascinated some and drove others into exile. Both the literatures of totalitarianism and of exile will be studied.

Prerequisite: the equivalent of at least four full courses from years 1, 2 and 3, including GERM 2P11/2P12(211hc/212hc).

Not open to students with credit in GERM 404.

Lectures, 3 hours per week.

GERM 4P07

German literature from 1945 to 1965

Following WW II a new literature flourished which divorced itself from the past and especially from the Nazi period. It soon achieved world renown. From poetry, drama and prose to new forms like the radio play, the docu-drama and the 'reportage', German literature becomes deeply involved in contemporary events. A cross section of these works reveals fascinating forms and language.

Germanic and Slavic Studies

Prerequisite: the equivalent of at least four full courses from years 1, 2 and 3, including GERM 2P11/2P12(211hc/212hc).

Not open to students with credit in GERM 403.

Lectures, 3 hours per week.

GERM 4P08

German literature from 1965 to the present

Since the 1960s an *avant garde* of writers' experiments with form, language and the perception of reality. Traditional values having become questionable, this literature reflects the alienation to which modern man is exposed. Works of international recognition will be studied.

Prerequisite: at least four courses from years 1, 2 and 3, including GERM 2P11/2P12(211hc/212hc).

Not open to students with credit in GERM 403.

Lectures, 3 hours per week.

GERM 4P98

Practicum in Germany

See GERM 3P98.

LING 1F94

Introduction to linguistics

(also offered as COMM 1F94)

The study of language and language use. Concepts related to disciplines in the humanities, social sciences and education will be discussed. The course is not limited to any specific language; it deals with questions common to all tongues.

Not open to students with credit in LING 190.

Open to students in any year of study.

RUSS 1F00

Introductory Russian

A course designed to develop the four basic skills in language proficiency (reading, writing, speaking and comprehension).

Lectures and language/computer laboratory, 4 hours per week.

RUSS 1F90

Intermediate Russian

Conversational and written language skills. Reading of selected texts.

Lectures, language/computer laboratory, 4 hours per week.

RUSS 1F95

Slavic culture and civilization

(given in English)

Analysis of the influence of religion, fine arts, philosophy and social conditions on the Slavic character and culture. Open also to non-majors.

Lectures, 3 hours per week.

RUSS 2F10

19th century literature

(given in English)

(formerly RUSS 2P12/2P13)

Exploration of main literary movements in Russia. A study of the development of literary traditions vital to Russian cultural and spiritual existence, including the writings of Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, and Chekhov.

Not open to students with credit in RUSS 211, 2P12 (212hc) or 2P13 (213hc).

Lectures, 3 hours per week.

RUSS 2F97

Advanced language

Readings and discussions of selected materials to develop expression and translation in Russian from literature, literary analysis and other related areas of interest.

Prerequisite: RUSS 1F90(190) or equivalent or departmental permission.

Lectures, 3 hours per week.

RUSS 2V90-2V94

Special topics in Russian studies

(given in English)

An exploration of the main movements in literature, art, music, theatre and film in Russia from the 1880s through the 1920s.

1988/89: (2V90) **Russian theatre**

Highlights of the Russian theatre from the Classical period to the present.

Lectures, 3 hours per week.

RUSS 2V95-2V99

Special topics in Russian studies: Soviet Russian literature since Stalin

(given in English)

Problems and tendencies in the 60s and 70s in prose, poetry and drama:

Trifonov, Aitmatov, Rasputin, Yevtushenko, Sokolov and others.

Lectures, 3 hours per week.

RUSS 3F97

Literary language

Systematic coverage of Russian morphology; creative writing and expression; analysis and translation of prescribed texts.

Open to year 3 and 4 students only.

Lectures, 3 hours per week.

RUSS 3F99

Tutorial

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 chairperson.

Lectures and seminars, 3 hours per week.

RUSS 3P94

Literature of Socialist realism

(given in English)

The theory and history of Socialist realism and its literary manifestations. Writers read will be representative of the official ideology and its esthetics: Gorky, Gladkov, Sholokhov, and others.

Prerequisite: eight full university credits or permission of the instructor.

Not open to students with credit in RUSS 396.

Lectures, 3 hours per week.

RUSS 3P95

Dissonant and dissenting voices in Russian literature

(given in English)

Censored works and those on the borderline of official acceptability: Zamiatin, Pasternak, Solzhenitsyn, etc.

Prerequisite: eight full university credits or permission of the instructor.

Not open to students with credit in RUSS 396.

Lectures, 3 hours per week.

History

Officers of instruction

Chairperson

W.B. Turner

J.L. Sanders (after July 1, 1988)

Professors

F.C. Drake

J.M. McEwen

Associate professors

A.G. Arthur

C.R. Hanyan

R.G. Phillips

R.R. Taylor

W.B. Turner

C.M. Wolff

Assistant professors

P.G. Dirks

J.L. Sanders

Professor emeritus

D.J. Goodspeed

General information

Mackenzie Chown complex 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 analyze 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 history courses they will take over years 2 and 3 from within one of the designated fields. Their three other history 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 chairperson of the department in arranging acceptable programs.

From a calendar listing of 17 full and 37 half courses, both lecture and seminar courses, the department normally offers about 12 full and 20 half 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. Faculty members participate in all seminars. In many courses individual students are given the responsibility of organizing and leading discussions on particular topics.

Notes

1. For the purpose of fulfilling core and context requirements, HIST 1P92/1P93 and HIST 1F95 are equally acceptable courses.

2. History majors must take a full course equivalent outside of history to satisfy their social science core and context requirement.

The History department recommends combining history with other disciplines in humanities and social science, such as classics, English, languages, philosophy, economics, geography, politics, psychology and sociology.

The department also recommends POLI 2P81(205hc) or MATH 1F92(192) to students intending to proceed beyond an honors degree in history.

Pass program

Seven credits in history are required for a pass degree.

Year 1

HIST 1P92/1P93 or 1F95; one social science and one science context credit; two elective credits.

Years 2 and 3

Six credits in history from those numbered 1P92 to 3(alpha) 99; four elective credits. Normally, three credits in history are taken in each year.

Each year, a student's program must be approved by departmental advisers at registration.

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.

Second language requirement

History majors are required to complete a 1F90 level credit in French, German, Italian, Latin, Russian or Spanish; French 1F80 with a B grade will also be acceptable.

Honors program

Eleven credits in history are required for an honors degree.

Years 1, 2, and 3

As in pass program.

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

History

that the course will be offered the following year. A tentative list of year 4 level courses to be offered in 1989/90 is available in the department.

Year 4

Four credits in history and one elective credit. History courses should include two credits numbered 4(*alpha*) 00-4(*alpha*) 99; one course numbered 3(*alpha*) 90 or above; one other credit in history. The courses chosen must be approved by the department chairperson, 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 course numbered 3(*alpha*) 90 or above in year 3.

Year 4 seminars will be organized to meet the needs and desires of students, within the constraints of faculty availability and expertise. Students should consult with the department in the spring prior to their registration in year 4 in order to ensure the offering of seminars which meet their needs. Where numbers do not warrant a seminar format, individualized programs will be developed.

Combined major programs

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 history, and the candidate for an honors degree a minimum of seven credits in history. Normally a pass student will take three history 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.

Description of courses

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

HIST 1F95

A violent century: an introduction to world history since 1914

The 20th century has been characterized by international and civil war, riot and revolution, rebellion and sedition, military coups and guerilla warfare. This course examines the cultural, social, economic, military, diplomatic and political causes of mass violence in our time. Seminar and lecture topics will include the Russian Revolution, the Jewish Holocaust, Gandhi and the Vietnam war.

Not open to students with credit in HIST 191.

Lectures, seminar, 3 hours per week.

HIST 1P92

Early medieval Europe

A study of the societies and culture of Western Europe from the late Roman Empire until the Crusades and the Twelfth 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 analyzed.

Not open to students with credit in HIST 190.

Lectures, seminar, 3 hours per week.

HIST 1P93

The high middle ages

An examination of 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.

Not open to students with credit in HIST 190.

Lectures, seminar, 3 hours per week.

HIST 2F74

Canada to 1864

A study of Canada's development from the time of French colonization to the period of Confederation, which examines political, social, religious and economic growth.

Lectures, seminar, 3 hours per week.

HIST 2F80

The Thirteen Colonies

A comparative survey of the Thirteen Colonies from their founding to the American Revolution, with emphasis on the problem of the imperial connection, the social and theological bases of Puritanism, Quakerism and witchcraft, political developments and commerce, slavery and warfare.

Lectures, seminar, 3 hours per week.

HIST 2F94

Canada since 1867--discovering the "Canadian" way

A survey of the evolution of Canada's political, economic and social structures in the century after Confederation.

Lectures, seminar, 3 hours per week.

HIST 2F97

From colonies to colossus

The history of the United States in the years from the Revolution to the war with Spain. This course explores the turmoil of nineteenth 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, this course traces 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 nonalcoholic country.

Lectures, seminar, 3 hours per week.

HIST 2P21

Early modern Britain

The British Isles in the fifteenth and sixteenth centuries, emphasizing the emergence of the centralized state, the impact of religious reformation, and the achievements of the Elizabethan age.

This course is the normal prerequisite for HIST 2P22.

Not open to students with credit in HIST 220.

Lectures, seminar, 3 hours per week.

HIST 2P22

Century of revolution

The origins and effects of revolution and civil war in seventeenth century Britain.

Prerequisite: HIST 2P21(221hc) or permission of the instructor.

Not open to students with credit in HIST 220.

Lectures, seminar, 3 hours per week.

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.

Not open to students with credit in HIST 232hc.

Lectures, seminar, 3 hours per week.

HIST 2P31

Europe during the Reformation, 1480-1580

A study of 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.

Not open to students with credit in HIST 233hc.

Lectures, seminar, 3 hours per week.

HIST 2P34

Europe during the Iron Century, 1560-1715

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, 1700-1787

An examination of 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.

Lectures, seminar, 3 hours per week.

HIST 2P42

Europe during the French Revolution, 1785-1799

A study of the origins and course of the French Revolution. Topics include the debate on the causes of the Revolution, its class character, political reforms, counter-Revolution and the wider social and economic impacts of the Revolution. Consideration will also be given to the effects of revolutionary ideas and the revolutionary wars on Europe.

Lectures, seminar, 3 hours per week.

HIST 2P51

Europe's greatest century: 1815-1914

An examination of the political, social and cultural changes in the sub-continent 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

A study of 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: Stalin's Russia, the Nazi movement, the Holocaust, the Gaullist phenomenon and the Prague Spring of 1968.

Lectures, seminar, 3 hours per week.

HIST 2P61

Military history to 1800

A study of the evolution of military strategy, tactics, logistics and weapon systems from the Battle of Marathon to the Napoleonic era.

Not open to students with credit in HIST 290.

Lectures, seminar, 3 hours per week.

HIST 2P62

Military history, 1800-1945

A study of the evolution of military strategy, tactics, logistics and weapon systems from the campaigns of Napoleon through the Second World War.

Not open to students with credit in HIST 290.

Lectures, seminar, 3 hours per week.

HIST 2P92

China in crisis: from Opium War to People's Republic

A study of Chinese history from 1840 to 1949. Focus will be on China's response to the challenge of the West and the problems of internal reform and change, rebellion and revolution which accompanied China's evolution from monarchy to People's Republic.

Lectures, seminar, 3 hours per week.

HIST 2P93

Foundations of modern Japan

A study of Japanese history from the fall of the Tokugawa shogunate to 1953. Some attention will be given to Tokugawa Japan, but the main empha-

History

sis 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 2P96

Piety, religious dissent and reform in the Reformation

An analysis of the personal, collective, institutional and cultural religious forces which underlay the various efforts to revitalize and reform the Christian church between 1400 and 1650. Differing movements will be compared and contrasted, in part through an examination of primary texts. Related topics like later humanist philosophy, esoteric beliefs and the witch-craze will also be examined. Not open to students with credit in HIST 233hc.

Lectures, seminar, 3 hours per week.

HIST 2P99

Ideas and culture, 1700-1850

An examination of 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 Germans

A survey of German history since the late 18th century, emphasizing social, economic and political problems. Lectures, seminar, 3 hours per week.

HIST 3F70

Russia, 1462-1801

A survey of 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 3F85

Power in America

An examination of 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.

HIST 3F90

Russia, 1801-1917: the road to revolution

An examination of 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

A survey of 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 3F95

The development of United States foreign policy

A survey of United States foreign policy from the American Revolution to the present, concentrating on the interaction of domestic and foreign affairs and on the development of territorial, economic and commercial expansion.

Lectures, seminar, 3 hours per week.

HIST 3F96

European cultural history, 1300-1600

An examination of such subjects as the shift from script to print, the gap between high and low cultures, the development of new artistic standards

and goals, and the cosmology of the early modern period. Particular attention will be directed to the context and framework within which speculation and literary and artistic expression or elaboration occurred.

Seminars, 3 hours per week.

HIST 3F97

The family in Europe

A comparative study of the family in Early Modern and Modern Europe. Topics examined include family and household forms; family economy and government; demography; law; marriage formation, stability and breakdown; gender and family relationships; sexuality. The family will be considered both in its own right and in terms of broader social, economic and political developments.

Lectures, seminar, 3 hours per week.

HIST 3P00

Ideas and culture since 1850

The concerns of this course will be similar to those of HIST 2P99(299hc), 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. Not open to students with credit in HIST 322.

Lectures, seminar, 3 hours per week.

HIST 3P23

The first industrial nation: 19th century Britain

British politics, society and culture during the climactic period of the first industrial revolution.

Not open to students with credit in HIST 322.

Lectures, seminar, 3 hours per week.

HIST 3P41

France, 1800-1848

A study of the Napoleonic state and the stabilization of France after the Revolution; the Restoration of the monarchy and the social, economic and intellectual forces which led to its

collapse in the Revolution of 1848.
Lectures, seminar, 3 hours per week.

HIST 3P42
France, 1848-1914

Repression of the Second Republic and the rise of Louis-Napoleon; the failure of authoritarian government and the outbreak of the Paris Commune in 1871; society, culture, the family, women and social order under the stress of industrial and agrarian change.
Lectures, seminar, 3 hours per week.

HIST 3P71
Modernization: Russia, China, Japan

A comparative study of the problems of modernization in Russia, China and Japan.
Lectures, seminar, 3 hours per week.

HIST 3P72
Russia in the 20th century: the Soviet Union

A study of the history of 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 to certain aspects of Soviet foreign policy.
Lectures, seminar, 3 hours per week.

HIST 3P74
Canada, a land of immigrants
A study of immigrants, immigration movements, problems of adjustment and government policies, concentrating on the period up to the first world war.
Lectures, seminar, 3 hours per week.

HIST 3P76
Canada's evolving social fabric
An analysis of 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.

HIST 3P81
The northeast in the old republic
An exploration of the political, social and economic development of north-

eastern states of the United States, such as Massachusetts, Pennsylvania and New York, up to the 1840s.
Seminars, 3 hours per week.

HIST 3P82
Canadian-American relations
Studies of major problems in the relationship between the United States and Canada in a selected time period.
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.

HIST 3P98
French Canada
A study of the cultural, economic and political institutions of French Canada as a means of analyzing 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 4F90
Honors research paper
A major research paper, undertaken in consultation with members of the department. Projects should be proposed in the spring, if possible.
Prerequisite: permission of the department.

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 History 4F99 in their third year.
Prerequisite: 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.
Hours to be arranged.

HIST 4P12
Post-Confederation Canada
An intensive examination of selected topics ranging from the political ideas of the Fathers of Confederation to the rise of separatism in modern Quebec. Topics studied in any one year will be related to a unifying theme.
Seminars, 3 hours per week.

HIST 4P17
American political culture
Selected problems in the history of American political culture.
Seminars, 3 hours per week.

HIST 4P18
Problems in United States foreign policy
Studies of major problems in United States foreign policy and international relations during a selected time period.
Seminars, 3 hours per week.

HIST 4P25
Britain and the Empire
An examination of a series of problems and themes in modern British domestic or Imperial history. Consult the department concerning available topics.
Seminars, 3 hours per week.

HIST 4P35
European society and politics
Aspects of the social and political history of a selected region of Europe during a specific period. This year the area of concentration will be Russia..
Seminars, 3 hours per week.

HIST 4P45
European thought and culture
A study of a series of related topics in the cultural and intellectual history of Europe.
Consult with the department.
Seminars, 3 hours per week.

History

HIST 4P91

Selected historical problems I

A seminar or tutorial, depending on numbers of students, combined with individual research. The emphases and modes of instruction will vary according to student and professional interests and concerns. Normally this course will be taken sequentially with one of the courses numbered HIST 4P12-4P45. Students should consult with the department chairperson well in advance of their enrolment.

HIST 4P92

Selected historical problems II

A seminar or tutorial, depending on numbers of students, combined with individual research. The emphases and modes of instruction will vary according to student and professional interests and concerns. Normally this course will be taken sequentially with one of the courses numbered HIST 4P12-4P45. Students should consult with the department chairperson well in advance of their enrolment.

Labor Studies

Director
D.G. Glenday

Participating faculty
A. Duffy, Sociology
D.G. Glenday, Sociology
R.E. Robb, Economics
D.T. Siegel, Politics

General information

Schmon tower 1005A

Labor studies is offered as a combined major program leading to a pass BA degree. The program offers a social science perspective to undergraduate students interested in labor studies. The three participating disciplines are economics, politics and sociology.

As part of the program, three special seminar style lectures are planned during the academic year. The first, to be scheduled early in September, will introduce students to each other and to participating faculty. The second and third, scheduled for December and April, will introduce the students to social science academics/practitioners in the field.

Each incoming student will be assigned an academic adviser from the labor studies program who will act as an "animator" to assist in planning the student's program and to help solve any individual academic or program related difficulties.

BA Pass Program

Year 1
ECON 1P91/1P92; POLI 1F90; SOCI 1F90, one science and one humanities context elective.

Economics and Labor Studies
Year 2
ECON 2P15, 2P21/2P22, 2P31/2P32, 2P90; MATH 1P98; SOCI 3P32; one elective credit.

Year 3
ECON 3P24/3P25; LABR 3F00; two credits from the labor studies course list (see Note below); one elective.

Politics and Labor Studies
Year 2
POLI 2P01, 2P81; ECON 2P15; SOCI 3P32; one credit in politics at the year 2 level (see Note below); one elective.

Year 3
LABR 3F00, POLI 3P33; one and one half credits in politics at the year 3 level; one credit from the labor studies course list (see note below); one elective.

Sociology and Labor Studies
Year 2
SOCI 2F01, 2F10; ECON 2P15; SOCI 3P32; one credit from the labor studies course bank (see Note below); one elective.

Year 3
LABR 3F00; SOCI 3F01; one credit in sociology at the year 3 level; one credit from the labor studies course list (see Note below); one elective.

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
ECON 2P09	Canadian economic history
ECON 2P15	The economics of unions
ECON 3P24	Labor economics
ECON 3P25	Topics in labor economics
POLI 3P33	The state and economic life

POLI 3P65	Introduction to public policy
SOCI 2P32	The sociology of work
SOCI 3P30	Sociology of women and work
SOCI 3P32	The labor process and trade unions
SOCI 3P34	Information technology and work
SOCI 3P66	Social movements
SOCI 3P76	Technology and change

Description of Courses

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

LABR 3F00
Labor studies workshop
A social science and internationally comparative perspective on the labor movement. Faculty from Economics, Politics and Sociology will participate in this course.

Liberal Studies

Director

A.V. Soady

Associated faculty

H.E. Bell, Mathematics

L. Bradshaw, Politics

R. Church, Politics

G.H. Coggins, English Language and Literature

M.S. Gibson, Chemistry

R.R. Hiatt, Chemistry

M.C. Hornyansky, Philosophy

R.D. MacDonald, English Language and Literature

W. Mathie, Politics

A.V. Soady, Classics

K.J. Tinkler, Geography

D.J. Ursino, Biological Sciences

C.M. Wolff, History

General information

Schmon tower 1231

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 cumulative, 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 or department. Students combining liberal studies with a major concentration in mathematics or science will usually be exempted from the mathematics and science courses, and may petition for exemption from the second language course 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 divisions 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 attend as many of the lectures and cultural events as possible, 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.

Great Books Seminars

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 contextual requirement may be met by successful completion of LBST 1F90. The social science contextual requirement may be met by successful completion of the full four-course sequence.

Bachelor of Arts in Liberal Studies

Honors Program, single major

LBST 1F90, 1F92, 2F90, 3F90, 3P95, 4F50, 4P99; two of LBST 2P92, 2P96, 3V95-3V99; SCIE 1F20 (on petition, another science context credit may be substituted); a coherent sequence of three credits in another discipline related to a particular dimension of the student's liberal studies program. At least one credit must be at the year 3 or year 4 level.

Combined major programs

Pass program

LBST 1F90, 1F92, 2F90; LBST 3F90 or 4F50; two of LBST 2P92, 2P96, 3V95-3V99; SCIE 1F20 (on petition, another science context credit may be substituted); five full credits from the second discipline.

Honors program

LBST 1F90, 1F92, 2F90, 3F90, 3P95, 4F50 and 4P99; two of LBST 2P92, 2P96, 3V95-3V99; SCIE 1F20 (on petition, another science context credit may be substituted); seven credits from the second discipline.

Second 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 coordinator 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.

Contextual requirements for liberal studies majors are deemed satisfied by successful completion of the program.

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.

LBST 1F92

Logic, rhetoric and practical criticism

(also offered as ENGL 1F92)
An examination of 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 analyze the logic and rhetoric of writings on a range of subjects in a variety of modes.

Not open to students with credit in ENGL 199 or LBST 195hc.
Lectures, seminar, 3 hours per week.

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. Prerequisite: LBST 1F90(190) or permission of the director. Seminars, 4 hours per week.

LBST 2P92

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. Prerequisite: LBST 1F90(190) or permission of the director. Co-requisite: enrolment in the liberal studies program. Lectures, seminar, 3 hours per week.

LBST 2P96

Euclidean and non-Euclidean geometry

Geometry from Euclid to the nineteenth century. Results and techniques from Euclidean and Lobachevskian geometry, with discussion of relevant logical and philosophical issues. Co-requisite: enrolment in the liberal studies program. Not open to students with credit in LBST 196hc. Seminars, 3 hours per week.

LBST 3F90

Great books seminar, III

Important works of modern Western literature, philosophy, science, and theology. Authors to be read and discussed include Descartes, Spinoza, Comenius, Molière, Hobbes, Goethe, Hegel, Marx, Dostoevsky and Freud. Prerequisite: LBST 2F90(290) or permission of the director. Seminars, 4 hours per week.

LBST 3P95

Linguistics, poetry and music

The study of language and music through a selection of the work of major theorists in language and music (linguists, literary and music critics, poets, prose writers, musicians). Prerequisite: LBST 1F92 or permission of the director. Seminars, 3 hours per week.

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. Lectures, seminar, 3 hours per week.

LBST 4F50

Great books seminar, IV

Important works of modern Western literature, philosophy, science, and theology to be read and discussed include: Milton, Racine, Locke, Hume, Burke, de Tocqueville, Dickens, Flaubert, Tolstoy, Durkheim, Weber and Nietzsche. Prerequisite: LBST 2F90(290) or permission of the director. Seminars, 4 hours per week.

LBST 4P99

Essay workshop

Workshop for development of the required senior liberal studies essays and discussion of issues the essays will explore. Seminars, 2 hours per week for two

Mathematics

Officers of instruction

Chairperson

J.W. Auer

Professors

H.E. Bell
S-C. Chang
R.A. Kerman
J.P. Mayberry
E.R. Muller

Associate professors

J.W. Auer
V.B. Headley
T.A. Jenkyns
C.F. Laywine
K.J. Srivastava
J. Vrbik

Assistant professor

W. Ralph

Instructor

A.E. Lordahl

General information

Schmon tower 1112

Scanning through the mathematics courses you will notice a balance between pure mathematics (mathematics for its own sake) and applied mathematics (mathematics for attacking real-world problems). The interests and experience of the Mathematics department's faculty in both areas are varied and extensive. The total faculty teaching commitment of the department is to undergraduate teaching, and faculty are available to an extraordinary degree for consultation and help with problems.

An asterisk (*) indicates a service course which has been developed to serve students majoring in areas other than mathematics. Students should select these courses after consultation

with both their major departments and the Mathematics department.

A degree in mathematics must include MATH 1P12/1P90, MATH 1P93/1P94 or 1P93/1P95, 2F00, and either 2F10 or 3F10. Students in mathematics programs should choose their electives in consultation with the department. A mathematics major needs both facility in dealing with mathematical theories, and experience in the application of mathematics to real-world problems. Accordingly, all majors should choose at least a third of their upper year mathematics courses from each of the following groups:

(a) More theoretical courses: MATH 2F00, 2F10, 2F94, 3F00, 3F10, 3F94, 3P97, 3P98, 4F02, 4F10, 4F16, 4F21, 4F51, 4F52, 4P19, 4P20.

(b) Courses emphasizing applications: 2F95, 2F96, 2P20, 2P60, 3F95, 3P20, 3P57, 3P58, 3P59, 4P58, 4P59.

Note that Service courses, designated by an asterisk (*), may not be counted among the mathematics courses required for a mathematics degree.

Pass program

A pass degree program in mathematics must include MATH 1P12/1P90, MATH 1P93/1P94 or 1P93/1P95, MATH 2F00 and either MATH 2F10 or MATH 3F10.

A typical program will be as follows:

Year 1

MATH 1P12/1P90; MATH 1P93/1P94 or 1P93/1P95; three elective credits, at least two of which should be chosen to fulfill core and context requirements (PHYS 1P90 is recommended as the science context credit for students interested in physical applications of mathematics).

Year 2

MATH 2F00; two credits from MATH

2F10, 2F94, 2F96, 2P20, 2P60, 3F10, 3P20; one context credit (if all three are not taken in year 1); one elective credit.

Year 3

Three mathematics credits from those mentioned above or MATH 3F00, 3F94, 3P57, 3P58, 3P59, 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.

Honors program

An honors degree in mathematics requires 12 mathematics credits, which must include MATH 1P12/1P90; 1P93/1P94 or 1P93/1P95; 2F00, 2F10, 3F00, 3F10 and at least three mathematics credits numbered 3 (alpha) 90 or above. Students intending graduate work in mathematics will find it essential to have at least one of MATH 4F02 or 4F10, and preferably both.

A typical program will be as follows:

Year 1

As in pass program.

Year 2

MATH 2F00, 2F10; one credit from MATH 2F94, 2F96, 2P20, 3P20; two electives.

Year 3

MATH 3F00, 3F10; one credit from those mentioned above or MATH 3F94, 3P57, 3P58, 3P59, 3P97, 3P98, 4F21, 4P19, 4P20, 4P58, 4P59; two electives.

Year 4

Four credits in mathematics; one elective.

Honors degrees must contain a minimum of three credits numbered 3(alpha)90 or above.

Combined major programs

Combined major programs, pass and honors, have been developed with the departments of Biological Sciences, Chemistry, Computer Science, Economics, and Physics.

Students wishing to do combined programs in mathematics and a discipline not listed above may arrange individual programs with the two departments. The mathematics component of such a program must include five approved credits for a pass degree, and seven approved credits for an honors degree.

A typical combined major program is indicated below (for others see the calendar entry of the various other departments).

Mathematics and Computer Science

Honors program

Year 1

MATH 1F65; MATH 1P93/1P95; COSC 1P01/1P04; one science and one social science context credit.

Year 2

MATH 1P12/2P60, MATH 2F95; COSC 2P02/2P12, 2P03/2P04; one humanities context credit (see Note 1.).

Year 3

MATH 2F96, 2P20, 3F65; COSC 3F00; COSC 3P01/3P02; 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.

Honors degrees must contain a minimum of three credits numbered 3(alpha) 90 or above.

Note 1. ENGL 1F99 strongly recommended; it is a preferred prerequisite

for COSC 3F00.

Description of courses

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

MATH 1F65

Mathematics for computer science
Designed for students in computer science. This course primarily concerns the development, analysis and application of algorithms in basic discrete mathematics, elementary mathematical logic, mathematical induction, combinatorial analysis, discrete probability models, graphs and trees, recursion, limiting procedures and summation, and difference equations. It concludes with an introduction to the theory of automata.

Prerequisite: one grade 13 mathematics credit with a minimum grade of 65 per cent.

Lectures, 4 hours per week.

***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 χ^2 distributions; means and variance tests; analysis of variance, correlation and regression, applications and use of a computer package.

Prerequisite: grade 11 mathematics credit and permission of the department.

Not open to students with credit in any university mathematics course or ECON 2P90(290hc), PSYC 2F23(223) or SOCI 2F10(230).

Lectures, 3 hours per week; tutorial, 1 hour per week.

MATH 1P12

Introductory linear algebra
Vector algebra; systems of linear equa-

tions; basic matrix operations; matrix inversion; determinants, characteristic equations, eigenvalues and eigenvectors; diagonalization.

Prerequisite: two grade 13 mathematics credits (a third grade 13 credit is strongly recommended).

Lectures, 4 hours per week; tutorial, 1 hour per week.

***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.

Prerequisite: permission of the department.

Not open to students with any university mathematics credit other than an elementary statistics course unless it is a requirement of their program.

Lectures, 4 hours per week; tutorial, 1 hour per week.

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.

Prerequisites: two grade 13 mathematics credits (a third grade 13 credit is strongly recommended).

Lectures, 4 hours per week.

MATH 1P93

Differential calculus for science students

Limits, continuity, differentiation;

Mathematics

elementary functions; implicit differentiation, parametric differentiation, repeated differentiation, tangents and normals, maxima and minima, curve-tracing; differentials and simple theory of approximation and error.

Prerequisite: two grade 13 mathematics credits (a third grade 13 credit is strongly recommended).

Not open to students with credit in MATH 100.

Lectures, 4 hours per week; tutorial, 1 hour per week.

MATH 1P94

Integral calculus for science students

Systematic integration and definite integrals, with applications. Partial differentiation, simple extremal problems, Lagrange multipliers, simple first-order differential equations; series and Taylor series; introduction to determinants and matrices; complex numbers and DeMoivre's theorem; simple vector algebra; double and triple integrals, including applications and transformation of coordinates.

Prerequisite: MATH 1P93(193hc).

Not open to students with credit in MATH 100 or 195hc.

Lectures, 4 hours per week; tutorial, 1 hour per week.

MATH 1P95

Integral calculus

Mathematically rigorous treatment of the Riemann integral, substantial practice in methods of integration, applications to areas, volumes, probability distributions and first-order differential equations. Approximate integration methods, including a careful look at estimates of the truncation errors involved.

Prerequisite: MATH 1P93(193hc).

Not open to students with credit in MATH 100 or MATH 1P94(194hc).

Lectures, 4 hours per week; tutorial, 1 hour per week.

*MATH 1P97

Differential and integral methods

Designed for students of administrative studies, biological sciences, economics, geological sciences, and urban and

environmental studies. Elementary functions, particularly the power function, the logarithm, and the exponential; approximation to the area under a curve; the definite integral; the derivative, techniques of differentiation, maxima and minima; integration by substitution and by parts; use of integral tables; partial differentiation; simple differential equations; numerical methods.

Prerequisite: grade 12 mathematics or permission of the department.

Not open to students with credit in any university calculus course; i.e., MATH 100, MATH 1P93(193hc), MATH 1P94(194hc), MATH 1P95(195hc).

Lectures, 4 hours per week; tutorial, 1 hour per week.

*MATH 1P98

Basic statistical methods

Designed for students of administrative studies, biological sciences, economics, geological sciences, physical education and urban and environmental studies.

Descriptive statistics; probability; estimation; hypothesis testing; non-parametric tests; Normal, χ^2 , t and F distributions, means and variance tests; regression and correlation.

Prerequisite: grade 12 mathematics or permission of the department.

Not open to students with credit in any university statistics course i.e., MATH 1F92(192), MATH 2F96(296), ECON 2P90(290hc), PSYC 2F23(223), SOCI 2P10(230).

Lectures, 3 hours per week, tutorial, 1 hour per week.

MATH 2F00

Intermediate calculus

Numerical sequences and series, including the standard convergence tests; series of functions; continuous functions on \mathbb{R}^n ; theory of partial differentiation; transformations; integration theory: multiple integrals, arc length, surface area, line and surface integrals; Green's theorem, Gauss's theorem; vectors applied to the study of curves and surfaces in \mathbb{R}^3 ; convergence of the Fourier series of piecewise-smooth functions.

Prerequisite: MATH 1P93/1P95 (193hc/195hc) or 1P93/1P94(193hc/194hc).

Not open to students with credit in MATH 2F95.

Lectures, 4 hours per week.

MATH 2F10

Linear algebra

Theory of finite-dimensional vector spaces; algebra of linear transformations; matrices and determinants; canonical forms, eigenvalues, change of basis; applications.

Prerequisite: MATH 1P12(112hc) or permission of the department. A calculus credit is recommended.

Lectures, 4 hours per week, tutorial, 1 hour per week.

MATH 2F94

Topics in geometry

Foundations of Euclidean and non-Euclidean geometry; projective and affine geometry, including co-ordination theorems; discussion of specific geometries, including finite planes.

Prerequisite: permission of the department.

Lectures, 4 hours per week.

*MATH 2F95

Advanced calculus for science students

Limits and continuity, series, elementary complex functions, partial differentiation, ordinary differential equations, multiple, line, and surface integrals, vector field theory, linear transformations and basic theory of matrices, with applications, method of separation of variables, gamma and beta functions, elements of Fourier series; introduction to special functions of Legendre, Laguerre, Hermite.

Prerequisite: MATH 1P93/1P95 (193hc/195hc) or 1P93/1P94 (193hc/194hc).

Not open to students with credit in MATH 2F00(200).

Lectures, 4 hours per week.

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.
Prerequisite: MATH 1P93/1P95(193hc/195hc) or 1P93/1P94(193hc/194hc).
Lectures, 4 hours per week.

MATH 2P20

Numerical analysis I

Elementary techniques for solving: algebraic equations, systems of linear equations, differential equations, eigenvalues and eigenvectors of matrices; numerical integration and interpolation; and linear programming. Some theory of efficiency and precision of algorithms. Students will apply these techniques using the University's computer.
Prerequisite: MATH 1P93/1P95(193hc/195hc) or 1P93/1P94(193hc/194hc), plus COSC 1P93(193hc) or 1P01(101hc).
Lectures, 4 hours per week.

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, branch-and-bound methods. Inventory models: EOQ and generalizations. Queuing theory.
Prerequisites: MATH 1P97/1P98(197hc/198hc) or equivalents.
Lectures, 4 hours per week; tutorial, 1 hour per week.

MATH 3F00

Real and complex analysis I

Functions of bounded variation, the Riemann-Stieltjes integral, metric spaces (in particular, $C[a,b]$), approxi-

mation 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.
Prerequisite: MATH 2F00(200) or (with permission of the department) MATH 2F95(295).
Lectures, 4 hours per week.

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.
Prerequisite: MATH 1P12(112hc) or permission of the department.
Lectures, 4 hours per week.

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.
Prerequisite: MATH 1F65, MATH 1P12, MATH 1P97, COSC 2P03.
Lectures, 4 hours per week.

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.
Prerequisite: MATH 2F00(200); or permission of the department.
Lectures, 4 hours per week.

***MATH 3F95**

Methods of mathematical physics (also offered as PHYS 3F95)
See description under Physics.

MATH 3P20

Numerical analysis II

Topics in matrix analysis, approximation theory (including least-squares and minimax); Legendre, Chebyshev, and trigonometric functions; Gaussian quadrature.
Prerequisites: MATH 2P20(220hc) and either MATH 2F00(200) or 2F95(295) (the latter may be taken concurrently).
Lectures, 4 hours per week.

***MATH 3P57**

Discrete event simulation

(also offered as COSC 4P77)
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.
Prerequisite: MATH 1P97/1P98 (197hc/198hc); COSC 1P04(104hc).
Lectures, 3 hours per week.

MATH 3P58

Operations research methods A (also offered as ECON and MGMT 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.
Prerequisite: MATH 2P60(260hc).
Lectures, 4 hours per week.

Mathematics

Note:

MATH 3P58/4P58 and 3P59/4P59 are offered in alternate years.

MATH 3P59

Operations research methods B
(also offered as ECON and MGMT 3P59)

Principles of modeling; decision theory, subjective probability, and Bayesian statistics; simulation, sampling theory, design and analysis of experiments, discussion and analysis of selected cases.

Prerequisite: MATH 2P60(260hc) or permission of the department.
Lectures, 4 hours per week.

MATH 3P97

Introductory topology

Introduction to metric and topological spaces; connectedness, completeness, countability axioms, separation properties, covering properties, metrization of topological spaces
Prerequisite: MATH 2F00(200); and MATH 2F10(210) or 3F10(310).
Lectures, 4 hours per week.

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.
Prerequisite: MATH 2F10(210) and 3P97.
Lectures, 4 hours per week.

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 maximum-modulus principle, the Phragmen-Lindelof 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.
Prerequisite: MATH 3F00(300).
Not open to students with credit in

MATH 400 or 405.

Lectures, 4 hours per week.

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.
Prerequisite: MATH 3F10(310).
Lectures, 4 hours per week.

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.

Prerequisite: permission of the department.

Lectures, 4 hours per week.

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.

Prerequisite: MATH 2F96(296).

Lectures, 4 hours per week.

MATH 4F51

Calculus of variations and integral transforms

Calculus of variations and applications. Integral transforms (Fourier, Laplace and Mellin). Linear integral equations.
Prerequisite: MATH 3F94(394).
Lectures, 4 hours per week.

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.

Prerequisite: MATH 3F94(394).

Lectures, 4 hours per week.

MATH 4P19

Introduction to automata

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.

Prerequisite: permission of the department.

Lectures, 4 hours per week.

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.
Prerequisite: permission of the department. 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(210).

Lectures, 4 hours per week.

MATH 4P58

Operations research applications A
(also offered as ECON and MGMT 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; discussions and analysis of selected cases.

Prerequisite: MATH 3P58(358hc) or permission of the department.

Lectures, 4 hours per week.

MATH 4P59

Operations research applications B
(also offered as ECON and MGMT
4P59)

Applications of modeling, 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.

Prerequisite: MATH 3P59(359hc) or permission of the department.

Lectures, 4 hours per week.

Philosophy

Officers of instruction

Chairperson
M.L. Miles

Professors
J.R.A. Mayer
D. Sinha

Associate professors
R.S.G. Brown
D.L. Goicoechea
M. Husain
G.J. Nathan

Assistant professors
J.C. Luik
R.W. Malone
M.L. Miles

Professor emeritus
Z. Adamczewski
G.M.C. Sprung

General information

Schmon tower 1233

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.

Pass program

The following courses are required of all philosophy majors: one of PHIL 1F90, 1F91, 1F93, 1F94; 2F01; 2F02 and one half credit in Eastern philosophy (PHIL 2P12, 2P13, 2P16, 2P17 or

2F91). 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 of PHIL 1F90, 1F91, 1F93, 1F94; one social science and one science context credit; two elective credits (see Note 1.).

Year 2

PHIL 2F01, 2F02, one other philosophy credit; two elective credits, of which one must be approved by the department (see Note 1.).

Year 3

Three philosophy credits; two elective credits, of which one must be approved by the department.

Note 1.

Second language requirement for humanities majors

Philosophy majors must complete a language credit, classical or modern, at the 1F90 level, or two language credits at the 1F00 level, other than English.

Honors program

Years 1, 2, and 3
As in pass program.

Year 4

Three philosophy credits numbered 3(alpha)90 or above; two elective credits, of which one must be approved by the department.

All year 4 courses will be offered conjointly with a correspondingly numbered year 5 course.

Combined major program

Students wishing to major in philoso-

phy and in one other discipline are required to complete at least five philosophy credits including PHIL 2F01, 2F02, and one half credit in Eastern philosophy (PHIL 2P12, 2P13, 2P16, 2P17 or 2F91) for a pass degree, and at least seven philosophy credits (including the required ones) for an honors degree.

Master of Arts (MA) program

A master's program is offered, focused on two areas: recent and contemporary European thought, and Asian (especially Indian) thought. Candidates should have an honors BA in philosophy or its equivalent; 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 full courses and write a thesis; or to complete four full courses and write a major essay.

Graduate credits are to be obtained by completing courses designated at the 500 level. Except for tutorial, research and thesis courses, these are offered in conjunction with year four courses. A graduate student may earn graduate credit in them by doing additional readings, seminars and written work as the instructor deems appropriate. In principle, the additional work will represent 25 per cent of the normal undergraduate course load. A conjoint course previously taken for 400 level credit may not be re-taken for graduate credit.

The actual conjoint graduate and honors offerings in any given year will be selected from:

- I Modern studies: Hume, Kant, Hegel, Kierkegaard, Nietzsche, Husserl. The study of other leading figures of modern European thought may also be offered, but the ones specified represent the special interest and competence of the members of the department.

- II Contemporary studies: Heidegger, Sartre, Marcel, Buber, Scheler, Merleau-Ponty, Gadamer, or some contemporary European school such as the Structuralists or the Frankfurt school may be offer
- III Eastern studies: Indian philosophy; Upanishadic thought; texts from one or several of the six orthodox schools of Indian philosophy, especially Advaita Vedanta; Indian Buddhist traditions, especially Madhyamika; Jaina sutras; Mahayana texts.
- 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 conjoint half 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), 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 chairperson of the department.

Description of courses

Please note that not all courses are offered in every session. Refer to the applicable term timetable for details or consult the departmental *Philosophy handbook* (available in early April in Room ST 1233) for detailed descriptions of all courses offered in 1988/89.

All courses numbered 1F90 through 1F94 are *introductory* philosophy 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, though PHIL 1F91 may be taken in addition to 1F90, 1F93 or 1F94 with the permission of the department.

PHIL 1F90
Introduction to philosophy: philosophical classics and contemporary life

A study of contemporary problems 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. Not open to students with credit in two 190-level half courses in philosophy. Lectures, seminar, 3 hours per week.

PHIL 1F91
Philosophy and social issues
 Philosophical aspects of several widely debated social and public policy issues of current practical interest. Topics will be selected from abortion, animal rights, capital punishment, civil disobedience, discrimination, environmental ethics, euthanasia, nuclear war and violence, the question of personhood, the right to life, suicide, suffering, and world hunger. Lectures, seminar, 3 hours per week.

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. Not open to students with credit in two 190-level half courses in philosophy. Lectures, seminar, 3 hours per week.

PHIL 1F94
Introduction to philosophy: philosophical problems

A survey of the central problems of philosophy as living questions for reflection, dialogue and debate. The course will deal with such questions as: Is the external world really there? Does God exist? Can I really know anything? What is a person? Is everything permissible? Can my life have meaning?

Not open to students with credit in two 190-level half courses in philosophy. Lectures, seminar, 3 hours per week.

PHIL 2F01
Ancient Greek philosophy

A study of 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
 An introduction to some of the central problems of ethics through an examination of (1) such problems as egoism, relativism, ethical nihilism, emotivism, and responsibility and (2) selected major thinkers and a variety of normative traditions. Seminar, 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,

Philosophy

Christianity) by studying some typical approaches to such basic themes as God, man, time, truth, freedom.

Prerequisite: university credit in philosophy or a discipline appropriately related to the course content, or permission of the instructor.

Not open to students with credit in PHIL 311.

Lecture, 3 hours per week.

PHIL 2F93

Philosophical psychology

A study of 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.

Prerequisite: university credit in philosophy or a discipline appropriately related to the course content, or permission of the instructor.

Not open to students with credit in PHIL 313.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: university credit in philosophy or permission of the instructor.

Not open to students with credit in PHIL 312.

Lectures, seminar, 3 hours per week.

PHIL 2F95

Bioethics, an inquiry into selected issues

(also offered as BIOL 295)

An interdisciplinary course focusing on important issues from the areas of biology and medicine which give rise to moral dilemmas and value conflicts. Topics to be considered depend in part on student interest, but may include reproductive interventions, transplantation and the allocation of scarce medical resources, the control of human behavior, consent for treatment,

lifestyle choices, and death and dying.

This course may not count as a major course in biology or in biology combined major programs. It may serve as an elective for biology majors.

Prerequisite: university credit in philosophy or a discipline appropriately related to the course content, or permission of the instructor.

Lectures, seminar, 3 hours per week.

PHIL 2F96

Philosophy of man

A survey of major orientations in the concept of man, with relation to the basic issues involved in reaching a philosophical understanding of human nature and its place within reality, this course focuses on the notion of the person as well as on contemporary philosophical anthropology.

Prerequisite: university credit in philosophy or a discipline appropriately related to the course content, or permission of the instructor.

Not open to students with credit in PHIL 315.

Seminar, 3 hours per week.

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.

Spring Evening 1988:(2M90)

Body and human subjectivity

Prerequisite: university credit in philosophy or permission of the instructor.

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.

Not open to students with credit in PHIL 192.

Lectures, seminar, 3 hours per week.

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.

Not open to students with credit in PHIL 192.

Lectures, seminar, 3 hours per week.

PHIL 2P14

The beginnings of existential thinking

A study of the sources of both theistic and atheistic lived philosophy in such figures as: Kierkegaard, Nietzsche and Dostoyevski.

Not open to students with credit in Phil 206.

Seminars, 3 hours per week.

PHIL 2P15

The growth of existential thinking

A study of the work of such philosophers as: Scheler, Heidegger, Marcel and Sartre.

Not open to students with credit in PHIL 206.

Prerequisite: PHIL 2P14(214hc) or permission of the instructor.

Seminars, 3 hours per week.

PHIL 2P16

Early Chinese philosophy

A survey of 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.

Not open to students with credit in PHIL 208.

Lectures, 3 hours per week.

PHIL 2P17

Introduction to Chinese Buddhism

A survey of 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.

Not open to students with credit in PHIL 208.

Lectures, 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.

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

The focus of this course is on educational ideals from Plato to the present day. Students will come to appreciate the highly divergent objectives ascribed to education over the centuries.

Not open to students with credit in PHIL 211.

Lectures, 3 hours per week.

PHIL 2P32

The philosophy of education: critiques of present educational philosophy

This half course examines the assessment of prevailing educational theories and practices by critics such as Freire, Illich, Buber, with a view to enabling students to enrich their own educational experience.

Not open to students with credit in PHIL 211.

Lectures, 3 hours per week.

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

A study of 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 the current cognitive psychology; extensions of the phenomenological-existential methods to psychiatry (Binswanger); Eastern meditational traditions (Yoga, Mahayana Buddhism, etc.) relevant to phenomenological psychology.

Prerequisite: university credit in philosophy or a discipline appropriately related to the course content, or permission of the instructor.

Seminar, 3 hours per week.

PHIL 2P92

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. Topics are chosen in accordance with student interest.

Prerequisite: university credit in philosophy or permission of the instructor.

Lectures, seminar, 3 hours per week.

PHIL 2P94

Theory of knowledge

An exploration of 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.

Prerequisite: university credit in philosophy or a discipline appropriately related to the course content, or permission of the instructor.

Not open to students with credit in PHIL 309hc.

Seminar, 3 hours per week.

PHIL 2P95

Metaphysics

An enquiry into some of 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.

Prerequisite: university credit in philosophy or a discipline appropriately related to the course content, or permission of the instructor.

Not open to students with credit in PHIL 310hc.

Lectures, seminar, 3 hours per week.

PHIL 2P96

The philosophy of science

An historical introduction to the metaphysical foundations of modern physical science. A critical examination of 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 philosophy or a discipline appropriately related to the course content, or permission of the instructor.

Not open to students with credit in PHIL 325hc.

Seminar, 3 hours per week.

Philosophy

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.

Prerequisite: university credit in philosophy or a discipline appropriately related to the course content, or permission of the instructor.

Not open to students with credit in PHIL 306 or 333hc.

Seminar, 3 hours per week.

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.

Prerequisite: university credit in philosophy or a discipline appropriately related to the course content, or permission of the instructor.

Not open to students with credit in PHIL 317 or 344hc.

Lectures, seminar, 3 hours per week.

PHIL 2P99

Ethics and sexuality

The applications of ethics to questions of human sexuality. Topics for analysis will be selected from the following: sexual values, legal enforcement of morality, the semantics of sex, censorship, pornography, sex in advertising, abortion, prostitution, sexual perversion and AIDS.

Prerequisite: university credit in philosophy or EXST 1F50 or permission of the instructor.

Seminars, 3 hours per week.

PHIL 2V85-2V89

Contemporary social issues (formerly PHIL 2P85)

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, overpopulation, 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.

The topic in 1988-89 will be: (2V85)

Animal rights and affluence

Lectures, seminar, 3 hours per week.

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, this course investigates 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.

In 1988/89: (3M91) **Plato.**

Prerequisite: PHIL 2F01(201) or permission of the instructor.

Lectures, seminar, 3 hours per week.

PHIL 3P19

The rise of Christian philosophy

A study of philosophy from the patristic period through Erigena and Anselm up to and including the 12th century Renaissance.

Prerequisite: PHIL 201 or permission of the instructor.

Not open to students with credit in PHIL 297.

Lectures, 3 hours per week.

PHIL 3P20

Scholastic philosophy

A study of the great Islamic, Jewish and Christian philosophers of the 13th century.

Prerequisite: PHIL 2F01(201) or permission of the instructor.

Not open to students with credit in PHIL 297.

Lectures, 3 hours per week.

PHIL 3P56

Kant and the 18th century

An historical study of the thought of Immanuel Kant in the context of the 18th century enlightenment. The course will focus primarily on Kant's *Critique of Pure Reason*.

Prerequisite: PHIL 2F02(202) or permission of the instructor.

Not open to students with credit in PHIL 293.

Lectures, seminar, 3 hours per week.

PHIL 3P58

Hegel and the 19th century

The 19th century developed not only the great comprehensive metaphysical systems 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.

Prerequisite: PHIL 2P02(202), 3P56(356hc) or permission of the instructor.

Not open to students with credit in PHIL 258hc or 293.

Lectures, seminar, 3 hours per week.

PHIL 3V95-3V99

Issues in 17th and 18th century philosophy (formerly PHIL 3P96)

Study of 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.

Prerequisite: PHIL 2F02(202) or permission of the instructor.

Seminar, 3 hours per week.

Note 2.

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 full fourth year credit if they have obtained second class honors standing, or with the permission of the department.

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 chairperson of the department by the last day for late registration.

Prerequisite: see Note 2.

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.

Not open to students with credit in PHIL 506hc.

Prerequisite: see Note 2.

Seminar, 3 hours per week.

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.

Prerequisite: see Note 2.

Not open to students with credit in PHIL 400.

Seminar, 3 hours per week.

PHIL 4P09

Advanced studies in 20th century existential philosophy

An advanced seminar course in the continental European philosophy of the 20th century, e.g. Heidegger and Sartre.

Prerequisite: see Note 2.

Not open to students with credit in PHIL 400.

Seminar, 3 hours per week.

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

chairperson of the department by the last day for late registration.

Prerequisite: see Note 2.

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 chairperson of the department by the last day for late registration.

Prerequisite: see Note 2.

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.

Topic to be offered in 1988-89: (4V00)

Kant's political philosophy.

Prerequisite: see Note 2.

Seminar, 3 hours per week.

PHIL 4V10-4V14

Studies in contemporary European philosophy

A study of the work, usually of one thinker prominent in recent continental thought. The focus will vary from year to year.

1988-89: (4V12) **Hermeneutics** and (4V13) **Contemporary French philosophy.**

Prerequisite: see Note 2.

Seminar, 3 hours per week.

PHIL 4V15-4V19

Modern philosophical studies

An advanced course devoted to one or more of the major thinkers of the tradition from Descartes to the present day.

1988-89: (4V16) **Hegel** and (4V17)

Heidegger's Nietzsche.

Prerequisite: see Note 2.

Seminar, 3 hours per week.

PHIL 4V30-4V34

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.

1988-89: (4V31) **Buddhism** and

(4V32) **Vedanta**

Prerequisite: see Note 2.

Seminar, 3 hours per week.

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

Officers of instruction

Chairperson

L.J. Adams

Professors

J.R. Evans

A.G. Lowenberger

Associate professors

L. J. Adams

P. Cote-Laurence

R.M. Davis

V.J. Wilson

Assistant professor

S. Green

Lecturer

W. Montelpare

Sessional lecturer

V. Drake

General information

Physical Education and Recreation centre 213

Physical education students may choose either a three year pass program or a four year honors 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 Rudolph Laban. Students may select additional elective courses 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 School of Physical Education and Recreation.

Pass program

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 select and 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. In order to be eligible to major in physical education, students must achieve a minimum grade of 65 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 full courses or equivalents.

Note 2.

Students who achieve a grade of 75 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.

Year 2

PHED 2P00, 2P02, 2P03, 2P04, 2P05, 2P07; one social science context elective; one elective (see Note 1. above).

Year 3

PHED 3P00, 3P03, 3P04, 3P07, 3P17, 3P41; two elective credits.

Note:

Students intending to pursue teacher certification upon completion of their degree should consult the calendar entry for the College of Education for the program admission requirement.

Honors program

Years 1, 2 and 3

As in pass program.

Year 4

At least one of PHED 4F90 or 4F91 or 4F93; 2 credits in physical education numbered 3(alpha)90 or higher; two elective credits.

Elective areas of concentration

In addition to the core, students wishing to pursue a particular area of interest may select recommended courses in the following areas:

Adapted movement studies

The focus of this area will be to understand and meet the needs of special populations such as the physically or mentally handicapped. A combination of courses in physical education, psychology, and child studies will be taken.

Recommended courses:

PHED 3P04	Physical education for the exceptional individual
PHED 3P92	Assessment and activity for special populations
PSYC(CHST) 3F96	Psychology of the exceptional child

Optional courses:

- CHST 3F35 Integrating the special child
- EDUC(CHST) 3F50 Focus on early childhood education
- PHED 2P94 Movement for the young child

Senior adult studies

Recommended courses:

If a student is interested in working with senior adults the following courses are recommended:

- PHED 2P97 Fitness assessment and exercise prescription
- PHED 3P04 Physical education for the exceptional individual
- PHED 2P44 Activity programming for the senior adult
- PSYC 3P94 Life-span psychology: processes and developmental tasks of late adulthood.
- RECL 3P12 Leisure and aging.

Optional course:

- PSYC 3P93 Life-span psychology: early adulthood and middle age.

Child movement studies

Movement activities appropriate for children will be the focus of this area. Enhancing motor performance and integrating various subject areas through physical activity will be studied.

Recommended courses:

- PHED 2P94 Movement for the young child
- PHED 3P22 Movement orientation to physical education
- PHED 3P97 Observation and analysis of movement

Optional courses:

- CHST 2F10 Child development
- EDUC(CHST) 3F50 Focus on early childhood education
- PSYC 2F10 Child psychology
- THEA 2F10 Drama in education I

Coaching

The increasing availability of sport at all levels has heightened the community's need for qualified coaches. Consideration will be given to both the physical and psychological aspects of the coach's responsibilities.

Recommended courses:

- PHED 2P19 The philosophy and principles of coaching
- PHED 2P70 Care and prevention of injuries in athletes
- PHED 2P97 Fitness assessment and exercise prescription
- PHED 3P90 Aspects of exercise physiology

Optional courses:

- PHED 2P01 Organization and administration of physical education and sport
- PHED 3P05 Psycho-motor learning and motor control
- PHED 3P22 Movement orientation to physical education
- PHED 3P95 Psycho-social aspects of sport
- PSYC 2F35 Motivation

In addition, it is strongly recommended that students obtain technical certification in the sport(s) of their choice. This certification is available through the appropriate sport governing body.

Health studies

Students choosing this area will have the opportunity to explore more fully

their interests in contemporary health issues. Topics may range from environmental health and drug education to selected aspects of human sexuality. To facilitate these studies, courses may be selected from the departments of Biological Sciences, Sociology, Psychology, and Extradepartmental Studies.

Recommended courses:

- PHED 2P41 Science and health behavior
- PHED 3P41 Health behavior

Optional courses:

- BIOL(PHIL) 2F95 Bioethics, an inquiry into selected issues
- EXST 1F50 Aspects of human sexuality
- PHED 2P96 Measurement and evaluation
- PSYC 3F92 Drugs and behavior
- PSYC 3F95 Stress and emotion
- SOCI(CHST) 3P21 The family
- SOCI 3P26 Medical sociology
- SOCI(CHST) 3P51 Gender roles and the changing family

The psychology/sociology of sport studies

The implications of psychological and sociological considerations as they relate to motor performance and sport will be investigated. A combination of courses in physical education, psychology, and sociology will be taken.

Recommended courses:

- PHED 2P02 Psycho-social growth and development
- PHED 3P95 Psycho-social aspects of sport

Optional courses:

- PSYC 2F25 Dynamics of personality
- PSYC 2F30 An introduction to social psychology

Physical Education

PSYC 3P85	Theories of personality: Freud and Jung
PSYC 3P86	Theories of personality developments in psychodynamics and transpersonal psychology
PSYC 3F95	Stress and emotion
PSYC 3F97	Personality assessment and research
SOCI 2P52	Socialization
SOCI 2P53	Personality and role
SOCI 3P47	Ethnic groups
SOCI 3P52	Beliefs and values
SOCI 3P55	Interpersonal behavior
SOCI 3P56	Small groups

Non-physical education majors

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, 2P96, 2P94, 2P97, 3P00, 3P04, 3P07, 3P17, 3P41, 3P90, 3P92, 3P93, 3P95.

Students must note that there is a limit of five credits in physical education, recreation and leisure studies, administrative studies, education and teaching English as a second language which can be included for credit in a pass BA or BSc program.

Other programs

In addition to the academic program, the School of Physical Education and Recreation provides four distinct non-academic programs: intramural, recreational, sport skills and intercollegiate athletics. For details, see Facilities and Services.

Description of courses

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

PHED 1P91

Physical activity and man

The study of the development and current role of physical activity in society with reference to historical influences. Contemporary problems facing sport and physical activity will be discussed.

Not open to students with credit in PHED 190.

Lectures, seminar, labs, 5 hours per week.

Note: Physical education majors must select and successfully complete the activity labs outlined below. Students will register for labs at registration.

PHED 1P92

Introduction to exercise

An introductory course providing an understanding of how the body responds to and recovers from physical activity. In addition, the adaptations of the body to a variety of training programs will be examined.

Not open to students with credit in PHED 190.

Lectures, labs, 5 hours per week.

Note: Physical education majors must select and 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.

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 Rudolph Laban. 2 hours per week.

PHED 0N03--Educational gymnastics

A six-week activity lab introducing students to functional movement based on the principles of Rudolph Laban. 2 hours per week.

PHED 0N04--Team games

A six-week activity lab that will provide students with fundamental skills associated 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.

PHED 1P93

Introduction to movement education

The history, philosophy and principles of movement education. A particular emphasis will be placed on Laban and his contribution to this field. Special attention will be paid to the development of movement education in the United Kingdom, Canada and the United States.

Lectures, lab, 3 hours per week.

PHED 1P94

Introduction to motor development

The patterns of changes in motor abilities and skills involved in motor development throughout the lifespan. Physical growth, maturation and age related changes in motor behavior will be surveyed as well as factors affecting them.

Lecturers, seminar, 3 hours per week.

PHED 2P00

Movement orientation through developmental games

A theoretical and practical course providing students with a basic understanding of the characteristics and

needs of children. An aim of the course will be to develop an understanding of motor skill development and games activities for individuals of all ages. Students will be introduced to the fundamental principles of movement as developed by Rudolph Laban, and will apply them extensively through fundamental skills, developmental skills and developmental games. Prerequisite: PHED 1P91/1P92 (191hc/192hc), 1P93/1P94, or permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 2P01

Organization and administration of physical education and sport.

An introduction to administration theory and practice in physical education and sport settings. Attention is focused on various aspects of administrative behavior as it occurs in the provision of public and private physical education and sport services. Organizational characteristics of physical education and sport services at a federal, provincial and local level will also be reviewed.

Prerequisite: PHED 1P91/1P92 (191hc/192hc), 1P93/1P94 or permission of the instructor.

Lectures, lab, 3 hours per week.

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 cohesion, and leadership roles of the individual.

Prerequisite: PHED 1P91/1P92 (191hc/192hc), 1P93/1P94 or permission of the instructor.

Lectures, seminar, 3 hours per week.

PHED 2P03

Movement orientation through educational gymnastics

The theory of movement education will be examined as: a content matter; a

means of analyzing movement; a means for the individual to develop progression within his or her own motor performance. Practical application of the theory will be pursued through lab situations which deal with educational gymnastics.

Prerequisite: PHED 1P91/1P92 (191hc/192hc) including PHED Lab 0N03, PHED 1P93/1P94, or permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 2P04

Musculo skeletal anatomy

The anatomical bases of movement--skeletal, nervous, and muscular systems--will be dealt with to develop an understanding of human movement. Anatomically, the course will look at the skeletal structure, joint actions, and the interrelationship of aggregate muscle groups. Articular and muscular injuries will be dealt with where they apply. In addition, biomechanics and the growth and development of anatomical systems from birth to late teens will be studied.

Prerequisite: PHED 1P91/1P92 (191hc/192hc), 1P93/1P94 or permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 2P05

Motor learning and motor behavior

A theoretical orientation to the acquisition of motor skills including: aspects of growth and development, the neurophysiological structures involved in learning, learning theories and their application, as well as information processing and factors involved in the acquisition of motor skills. Basic theory related to psychomotor growth of children will be covered.

Prerequisite: PHED 1P91/1P92 (191hc/192hc), 1P93/1P94 or permission of the instructor.

Lectures, lab, 3 hours per week.

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. Prerequisite: PHED 1P91/1P92 (191hc/192hc) including PHED lab 0N02; PHED 1P93/1P94, PHED 2P00(200hc) or 2P03(203hc), or permission of the instructor

Lectures, lab, 3 hours per week.

PHED 2P19

The philosophy and principles of coaching

(formerly PHED 3P91)

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.

Prerequisite: PHED 1P91/1P92 (191hc/192hc), 1P93/1P94, 2P00(202hc), 2P04(204hc), 2P05(205hc), or permission of the instructor.

Not open to students with credit in PHED 3P91.

Lectures, seminar, 3 hours per week.

PHED 2P41

Science and health behavior

(formerly PHED 3P42)

Problems associated with individuals and their ability to function effectively and efficiently in present day society.

Using a synthesis of health related research, the student will examine the decision-making process and formulate a personal philosophy of health.

Prerequisite: PHED 1P91/1P92 (191hc/192hc), 1P93/1P94 or permission of the instructor.

Not open to students with credit in PHED 340, 2P41 or 3P42.

Lectures, lab, 3 hours per week.

PHED 2P44

Activity programming for the senior adult

(formerly PHED 3P44)

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

Physical Education

competitive and co-operative games or sport activity. Students will be involved in a practicum situation dealing with senior adults in community or institutionalized settings.

Prerequisite: PHED 1P91/1P92(191hc/192hc), 1P93/1P94 or permission of the instructor.

Not open to students with credit in PHED 3P44.

Lectures, lab, 3 hours per week.

PHED 2P70

Care and prevention of injuries in athletes

(formerly PHED 2P91)

The basic treatment, recognition and prevention of injuries in athletes; the interrelationship of anatomy, physiology and kinesiology and the practical application of knowledge of these fields including emergency care and preventative taping.

Prerequisite: PHED 1P91/1P92(191hc/192hc), 1P93/1P94, 2P04(204hc) or permission of the instructor.

Not open to students with credit in 2P91.

Lectures, lab, 3 hours per week.

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 will also integrate various art forms with movement activities. Basis of movement for pre-school children, motor development, role of play, creativity, and suitable environment for learning will be discussed.

Prerequisite: PHED 1P91/1P92(191hc/192hc), 1P93/1P94; PSYC 1F90(190) or permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 2P96

Measurement and evaluation (formerly PHED 3P96)

A study of 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.

Prerequisite: PHED 1P91/1P92 (191hc/192hc), 1P93/1P94 or permission of the instructor.

Not open to students with credit in PHED 3P96.

Lectures, lab, 3 hours per week.

PHED 2P97

Fitness assessment and exercise prescription

The implications for exercise prescription will be examined based on field and lab-like tests of physical fitness.

Age, sex, lifestyle and facilities will be examined as they relate to the parameters of physical fitness.

Prerequisite: PHED 1P91/1P92(191hc/192hc), 1P93/1P94 or permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 3P00

Movement orientation through advanced games

A continuation of the study of games. Emphasis will be 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.

Prerequisites: PHED 1P91/1P92 (191hc/192hc), PHED 2P00(200hc), 2P03(203hc), 2P07(207hc), or permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 3P03

Movement orientation through advanced educational gymnastics (formerly PHED 3P93)

Advanced sequential skill and knowledge development in the area of educational gymnastics.

Prerequisite: PHED 2P03(203hc) or permission of the instructor.

Not open to students with credit in PHED 3P93hc.

Lectures, lab, 3 hours per week.

PHED 3P04

Physical education for the exceptional individual

Emphasis is placed on understanding major handicapping conditions as well as understanding the gifted individual. Programming procedures and practical

work with exceptional individuals will be included.

Prerequisite: PHED 1P91/1P92 (191hc/192hc), PHED 2P00(200hc), 2P02(202hc), 2P03(203hc), 2P04(204hc), 2P05(205hc), 2P07(207hc) or permission of the instructor.

Lectures, lab, fieldwork, 3 hours per week.

PHED 3P05

Psychomotor learning and motor control

The human performance model is examined in detail, focusing on information processing as it relates to attention and human performance. The perceptual mechanism, decision mechanism, the effector mechanism and associated factors will be studied as they apply to skill development.

Contemporary theories of motor control will be discussed in relation to a variety of physical education settings. Prerequisite: PHED 2P05(205hc) Lectures, lab/seminar, 3 hours per week.

PHED 3P07

Movement orientation through folk dance

The analysis and structure of the principles of movement as they apply to folk dance as outlined by Rudolph Laban. Students will be given the opportunity to restructure existing traditional folk and square dance forms to bring them in line with current movement philosophy.

Prerequisite: PHED 1P91/1P92 (191hc/192hc), PHED 2P00(200hc) or 2P03(203hc) or 2P07(207hc) or permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 3P17

Movement orientation through advanced creative dance

Advanced sequential skill and knowledge development in the area of creative dance. Advanced movement themes will be explored in the study of dance as an art form.

Prerequisite: PHED 2P07(207hc) or permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 3P22

Movement orientation to physical education

The development and implementation of movement programs. Application of Laban's movement principles will be emphasized in order to give the student an understanding of these principles in practical situations.

Prerequisite: PHED 1P91/1P92 (191hc/192hc), PHED 2P00(200hc), 2P03(203hc), 2P07(207hc) or permission of the instructor.

Not open to students with credit in PHED 302.

Lectures, lab, fieldwork, 3 hours per week.

PHED 3P41

Health behavior

A survey of 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.

Prerequisite: PHED 1P91/1P92(191hc/192hc) or permission of the instructor.

Not open to students with credit in PHED 340.

Lectures, lab, 3 hours per week.

PHED 3P80

Clinical and field practices in athletic therapy

Clinical and field skills used in athletic therapy. Emphasis is placed on musculo-skeletal assessment, management of spinal injury, therapeutic modalities, advanced taping and wrapping procedures. A clinical internship in the athletic injury clinic is required.

Prerequisite: PHED 2P04(204hc) and 2P91(291hc) with a minimum grade of B, and permission of the instructor.

Lectures, 2 hours per week, internship, 3 hours per week.

PHED 3P81

Advanced clinical assessments in athletic therapy

A review of the functional and surface anatomy of the major joints and the advanced assessment skills used in the prognosis of sports injuries related to the lower appendage, lower back, and

gait assessment analysis.

Prerequisite: PHED 3P80(380hc) and permission of the instructor.

Lectures, 2 hours per week, internship, 3 hours per week.

PHED 3P90

Aspects of exercise physiology

Energy sources for exercise (aerobic and anaerobic) and the factors which influence work capacity, fatigue and the recovery process. Other topics include development of strength and endurance; responses and adaptation of endocrine and cardiorespiratory systems; temperature regulation training and assessment of the factors that influence the training effects.

Prerequisite: PHED 1P91/1P92 (191hc/192hc) or BIOL 1F90(190) or permission of the instructor.

Restricted to year 3 and year 4 students.

Not open to students with credit in PHED 290hc.

Lectures, lab, 3 hours per week.

PHED 3P92

Assessment and activity for special populations

An elective course designed for those students wishing to gain additional expertise in working with special populations. Particular attention will be given to assessment techniques and programming for mentally and physically handicapped persons. Practical work with special populations will be included.

Prerequisite: PHED 3P04(304hc) or permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 3P95

Psycho-social aspects of sport

An elective course designed to integrate 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 human movement patterns.

Prerequisite: PHED 2P02(202hc) or permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 3P97

Observation and analysis of movement

Studies and readings in selected areas of movement observation. Observational techniques, analysis of movement patterns, factors influencing movement behavior and the recording of movement patterns.

Prerequisite: PHED 2P03(203hc), 2P07(207hc) and permission of the instructor.

Lectures, lab, 3 hours per week.

PHED 3P98/3P99

Special studies in physical education

A series of lectures, seminars and practical experiences offered in specialized areas of physical education. Sessions will normally be set up in two consecutive parts. Students may elect 3P98 alone or both 3P98 and 3P99. Each half course will require a minimum of 30 hours of instruction.

Prerequisite: third year standing in PHED or permission of the dean of the School of Physical Education and Recreation.

PHED 4F90

Research methods in physical education

Students will examine the methods of research appropriate for use in physical education. Problem formation, hypothesis testing, statistical tools, research design and proposal writing will be examined. Critical analysis of research in a variety of areas of physical education will be emphasized. Restricted to honors candidates.

Tutorial, seminar, 4 hours per week.

PHED 4F91

Honors tutorial

Intensive, directed, individual study. In consultation with a faculty adviser, the student will select a topic for inquiry from one of the following areas: movement, education, health, motor learning, physical education for exceptional individuals, and psychosociological development.

Restricted to honors candidates.

Tutorial, seminar, 4 hours per week.

Physical Education

PHED 4F93

Advanced movement seminar

The course is designed to aid students in increasing their personal expertise and knowledge in movement education. Emphasis will be on improvement, refinement, and perfection of personal skills, observational skills, and analytical skills in a wide variety of movement experiences.

Restricted to honors candidates.

Not open to students with credit in PHED 403.

Tutorial, seminar, 4 hours per week.

Physics

Officers of instruction

Chairperson
C. A. Plint

Professors
J.E.Black
F.P. Koffyberg
C.A. Plint
R.C. Shukla

Associate professors
B. Mitrovic
J.A. Moore

Assistant professor
F.S. Razavi

Senior laboratory instructor
G.F. Allen

General information

Mackenzie Chown complex B210

The department offers a three year pass and a four year honors program leading to a BSc. Students may take a single major in physics, or a combined major with biological sciences, chemistry, computer science, geological 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.

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.

Pass program

Year 1
PHYS 1F20 or PHYS 1F90 (preferred); MATH 1P93/1P94 or MATH 1P93/1P95; COSC 1P91 and MATH 1P12; CHEM 1F85 or CHEM 1F93 (preferred); one humanities or social science context credit.

Year 2
PHYS 2P20/2P21, 2P30/2P31, 2P41/2P42; MATH 2F95; one humanities or social science context credit (which ever was not taken in year 1).

Year 3
PHYS 3F95, 3P20, 3P31, 3P50, 3P70, 3P91, 3P92; one elective credit.

Honors program

Years 1 and 2
As in pass program.

Year 3
As in pass program*.

*PHYS 4P41 or PHYS 4P70 may be taken in year 3 with permission of the instructor.

Year 4
PHYS 4F50, 4F90; two year 4 physics credits; one elective credit.

Combined major programs

Typical programs are:

Physics and Biological Sciences

Pass program

Year 1
PHYS 1F20 or PHYS 1F90 (preferred); BIOL 1F90; MATH 1P93/1P94; one humanities and one social science context credit.

Year 2
PHYS 2P20/2P21; BIOL 2F01 and one credit from BIOL 2F03, 2P90, 2P91, 2P93, 2P98; CHEM 1F85 or CHEM 1F93 (preferred); MATH 2F95.

Year 3
One of PHYS 3P20, 3P50, 3P70; PHYS 2P30, 2P41, 2P42; one biology credit; one year 2 or 3 credit in biology or one year 3 physics credit; one elective credit.

To qualify for a pass degree, students must complete a minimum of three credits numbered 2(*alpha*) 90 or above.

Honors program

Years 1, 2 and 3
As in pass program.

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 physics; one year 3 or 4 credit in biology; one year 3 or 4 credit in physics or biology.

To qualify for a honors degree, students must complete a minimum of three credits numbered 3(*alpha*) 90 or above.

Physics and Computer Science

Honors program

Year 1
PHYS 1F20 or PHYS 1F90 (preferred); COSC 1P01/1P04; MATH 1F65, 1P93/1P94; one social science context credit.

Year 2
PHYS 2P20/2P21; PHYS 2P30/2P31 (or 2P41/2P42); COSC 2P02/2P12; MATH 2F95; one humanities context credit (see Note 1.).

Year 3
PHYS 3P20; and one and one half credits from PHYS 3F95, 3P50, 3P70; COSC 2P03/2P04; one COSC credit numbered 2(*alpha*)90 or above; MATH 1P12; one half elective credit.

Physics

Year 4

Two credits from PHYS 4F50, 4F90, 4P41, 4P70; COSC 3F00, 3P01/ 3P02; one COSC credit numbered 3(*alpha*)90 or above.

Notes:

1. ENGL 1F99 strongly recommended; it is a preferred prerequisite for COSC 3F00.

Physics and Mathematics

Pass program

Year 1

PHYS 1F20 or PHYS 1F90 (preferred); MATH 1P93/1P94 or 1P93/1P95; MATH 1P12/1P90; one humanities and one social science context credit.

Year 2

PHYS 2P20/2P21, 2P30/2P31, 2P41/2P42; MATH 2F00 or 2F95; MATH 2F10.

Year 3

PHYS 3P20, 3P31, 3P50, 3P70; MATH 3F00; PHYS 3F95 or MATH 3F94; one elective credit.

Honors program

Years 1, 2 and 3

As in pass program.

Year 4

PHYS 4F50; two of PHYS 4P41, 4P70, 4P71; two of PHYS 4F90, 4F91, or any two year 4 mathematics credits; one elective credit.

Please refer to the departmental listings in Chemistry and Geological Sciences for combined major programs with these subjects.

Master of Science (MSc) program

The department offers an MSc program in molecular and solid state physics. Experimental and theoretical studies are provided. The program must include PHYS 5F90 (MSc thesis) and the equivalent of two full courses, 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
Manybody theory

PHYS 5P73
Light scattering in condensed matter

PHYS 5P74
Anharmonicity in crystals

For details, see the graduate calendar or contact the chairperson of the department.

Description of courses

Abbreviations:

ASTR Astronomy

CHEM Chemistry

MATH Mathematics

PHYS Physics

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.

Field trips and seminars: these will average about 1 hour per week, and will consist of a trip to an astronomical observatory, several nights of observing 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; lab/ problem sessions, 2 hours per week.

PHYS 1F90

Principles of physics

A basic treatment of mechanics, electromagnetism, and optics, followed by an introduction to atomic and nuclear 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. Calculus is used in the later parts of the course. Credit in PHYS 1F90 is preferred for entry into all Year 2 physics courses.

Prerequisite: grade 13 physics is strongly recommended.

Lectures, 3 hours per week; labs 3 hours per week.

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.

Prerequisite: PHYS 1F20(120) or PHYS 1F90(190) (preferred); MATH 1P93/1P94(193hc/194hc) or 1P93/1P95(193hc/195hc).

Lectures and problem sessions, 3 hours per week; lab, 3 hours per week.

PHYS 2P21**Physical optics and relativity**

Wave theory; interference; scattering and diffraction; polarization; special relativity.

Prerequisite: PHYS 1F20(120) or PHYS 1F90(190) (preferred); MATH 1P93/1P94(193hc/194hc) or 1P93/1P95(193hc/195hc).

Lectures and problem sessions, 3 hours per week; lab, 3 hours per week.

PHYS 2P30**Electromagnetism**

The theories of electricity and magnetism are developed up to the level of Maxwell's equations.

Prerequisite: PHYS 1F20(120) or PHYS 1F90(190) (preferred); MATH 1P93/1P94(193hc/194hc) or 1P93/1P95(193hc/195hc).

Lectures, 3 hours per week; lab demonstration, tutorial, 2 hours per week.

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.

Prerequisite: PHYS 1F20(120) or 1F90(190) and a mathematics credit, or permission of the instructor.

Not open to students with credit in PHYS 232hc.

Lectures, 3 hours per week; lab, 3 hours per week. Laboratory will include student exercises and instructor demonstration.

PHYS 2P32**Electronic circuits**

dc circuits, ac circuits, rectifiers, power supplies, transistor amplifiers, operational amplifiers, digital circuits.

Prerequisite: PHYS 1F20(120) or 1F90(190) and a mathematics credit, or permission of the instructor. No previous course in electricity/magnet-

ism/electronics is required. High school algebra and some basic calculus will be used in the quantitative sections.

Not open to students with credit in PHYS 231hc.

Lectures, 3 hours per week; lab, 3 hours per week.

PHYS 2P33**Electronic devices**

Electrical concepts, wave mechanical concepts, conduction, semiconductors, energy bands, electronic devices, fabrication, I-V characteristics, rectifier, Zener, tunnel diodes, BJT, JFET, IGFET, LED, memory elements.

Prerequisite: PHYS 1F20(120) or 1F90(190) and a mathematics credit, or permission of the instructor. 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.

PHYS 2P41**Thermodynamics**

Development of classical thermodynamics, fundamental equations, equations of state, thermodynamic potentials, Maxwell's relations, phase equilibria, stability.

Prerequisite: PHYS 1F20(120) or PHYS 1F90(190) (preferred); MATH 1P93/1P94(193hc/194hc) or 1P93/1P95(193hc/195hc).

Lectures, problem sessions, 3 hours per week.

PHYS 2P42**Statistical physics**

Introduction to probability distribution functions, accessible states, entropy, temperature, partition functions.

Prerequisite: PHYS 2P41(241hc).

Lectures, problem sessions, 3 hours per week.

PHYS 3F95**Methods of mathematical physics**
(also offered as MATH 3F95)

Calculus of variations, elements of group theory, eigenvalue problem, theory of small oscillations, special functions, complex variable theory, contour integration, summation of series, introduction to tensors.

Prerequisite: PHYS 2P20(220hc), 2P21(221hc), MATH 2F95(295).

Lectures, 3 hours per week.

PHYS 3P20**Classical mechanics**

An advanced treatment of the mechanics of particles and rigid bodies; Lagrangian and Hamiltonian methods; small oscillations; Hamilton-Jacobi theory; relativity.

Prerequisite: PHYS 2P20(220hc), MATH 2F95(295).

Lectures, problem sessions, 4 hours per week.

PHYS 3P31**Electromagnetism I**

Electrostatic fields in vacuum, dielectric material, solution of Laplace's and Poisson's equations; magnetic field, steady currents, non-magnetic matter, induced emf, magnetic energy, magnetic materials; Maxwell's equations; propagation of plane electromagnetic waves in vacuum and dielectric media.

Prerequisite: PHYS 2P30(230hc), MATH 2F00(200) or 2F95(295).

Lectures and problem sessions, 3 hours per week.

PHYS 3P50**Introduction to modern physics**

Wave-particle aspects of electromagnetic radiation and particles. The structure of hydrogen and of atoms containing many electrons; energy levels, orbital and spin angular momenta, magnetic momenta, optical and x-ray spectra, binding energies of nuclei, introduction to nuclear models, characteristics of nuclear decay and reactions.

Prerequisite: PHYS 2P20/2P21 (220hc/221hc).

Lectures, 3 hours per week.

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 momentum theory, introduction to perturbation theory and variational methods.

Prerequisite: PHYS 3P50(350hc),

Physics

MATH 2F95(295).

Lectures and lab/problem sessions, 4 hours per week.

PHYS 3P91

Experimental physics I

Laboratory experiments to be selected from atomic physics, nuclear physics, solid state physics.

Prerequisite: PHYS 2P20(220hc), 2P21(221hc), 2P30(230hc), or permission of the instructor.

Not open to students with credit in PHYS 390.

Labs, 1 day per week.

PHYS 3P92

Experimental physics (Electronics) II

Solid state electronics; transducers, converters, switches, microcomputers, and their application to physical measurements.

Prerequisite: PHYS 2P31(231hc) or 2P32(232hc) or permission of the instructor.

Not open to students with credit in PHYS 390.

Labs, 1 day per week.

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.

Prerequisite: PHYS 3F95(395); 3P20(320hc), 3P70(370hc).

Lectures, 3 hours per week.

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 chairperson regarding their proposed program during the first week of lectures.

PHYS 4P32

Electromagnetism II

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.

Prerequisite: PHYS 3F95(395), 3P31(331hc).

Lectures, problem sessions, 3 hours per week.

PHYS 4P41

Statistical physics

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.

Prerequisite: PHYS 2P41(241hc), 2P42(242hc), 3P70(370hc).

Lecture and problem sessions, 4 hours per week.

PHYS 4P61

Nuclear physics

Intrinsic properties of nuclei, nuclear forces, nuclear levels; structure of deuteron, nuclear binding energy; qualitative treatment of Fermi gas model, liquid drop model, shell model and collective model; alpha, beta, and gamma radioactivities, nuclear fission, characteristics of nuclear reactions.

Prerequisite: PHYS 3P50(350hc), PHYS 3P70(370hc).

Lectures, problem sessions, 4 hours per week.

PHYS 4P70

Solid state physics 1a

Crystal structures and crystal binding. The vibration of atoms in solids and the thermodynamics of solids. Introduction to transport properties of solids.

Prerequisite: PHYS 3P70(370hc).

Lectures, 3 hours per week.

PHYS 4P71

Solid state physics 1b

Energy bands in metals and semiconductors, lattice vibrations, transport properties of solids, magnetism, defects in solids.

Prerequisite: PHYS 4P70(470hc).
Lectures, 3 hours per week.

PHYS 4P80

Introduction to the theory of general relativity and cosmology

Review of special relativity; Lorentz transformations, Minkowski space, tensor algebra, principle of equivalence, general covariance, curved spacetime, Einstein equations, Schwarzschild metric, solution of Einstein field equations, cosmological models.

Prerequisite: PHYS 3F95(395), 3P20(320hc), 3P31(331hc).

Lectures and problem sessions, 4 hours per week.

Politics

Officers of instruction

Chairperson
D.T. Siegel

Professors
C. Baar
W.H.N. Hull
W.D.K. Kernaghan
J.P. Sewell
G. Stevenson

Visiting Professor
M. Zuker

Associate professors
T.G. Carroll
R. Church
G.E. Dirks
J. Dreifelds
D. Madar
W.A. Matheson
W. Mathie
D.T. Siegel

Assistant professors
L. Bradshaw
R. Loreto

Lecturers
N. Baxter-Moore
P.W. Nesbitt-Larking

Professor emeritus
V.M. Fic

General information

Mackenzie Chown complex A337

Everyone engages in political activity, but not everyone takes the time to study politics. This is unfortunate because it is through politics that we shape the future of the world in which we live. Aristotle recognized the importance of politics and called it the master science. This was not an immodest claim, only an assertion of the pervasiveness and primacy of

political affairs. Of course, the study of politics will not make us master scientists, but it will provide us with many engaging possibilities.

Politics is seldom dry or constraining. Political scientists are interested in things as diverse as conflict in city hall, the reform of abortion laws, the influence of special interest groups on Canada's environmental policy, the question of when citizens ought to disobey the law, the cultural revolution in China, the control of civil servants, the causes of revolution, and the prospects for international control of the sea. The focus is always on the ideas, institutions and processes by which people govern and misgovern themselves, but there are no narrow intellectual horizons.

The courses offered in year 2 and above fall into a number of fields, and the department advises politics majors (pass and honors 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.

Courses are also offered as part of interdisciplinary programs in urban and environmental studies, communications studies, Asian studies, and administrative studies.

Politics 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 geographical area are urged to select related courses in history, language and literature. COSC 1P93 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 officer.

Pass program

Students enrolled in the pass program are required to take seven politics courses, normally POLI 1F90, three courses in year 2 and three in year 3. POLI 2P81 is required. POLI 2P01, (or POLI 2F90) is also required. Note that POLI 2F90 may be counted as a year 3 course.

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 politics course).

Year 2

Three credits chosen from: POLI 2F12, 2F20, 2F90, 2P01, 2P41, 2P42, 2P43, 2P45, 2P46, 2P81, 2P96, 2V40-2V49. Two elective credits.

Year 3

Three credits chosen from: POLI 2F90, 2P96, 3F30, 3F51, 3P04, 3P11, 3P15, 3P16, 3P17, 3P18, 3P19, 3P24, 3P26, 3P27, 3P28, 3P29, 3P33, 3P40, 3P43, 3P50, 3P52, 3P65, 3P66, 3P71, 3P77, 3P81, 3V00-3V09, 3V70-3V79. Two elective credits.

Politics

Honors program

Students in the honors program are required to take POLI 2P81 and one of POLI 3P81, 4P80 and 4P81. They are also required to take one credit chosen from either POLI 2F90 (recommended) or POLI 2P01 and any one of POLI 3P04, 3P05, 4P01, 4P02, and 4P03.

Years 1, 2, and 3

As in pass program.

Year 4

Three credits chosen from: POLI 4F99, 4P01, 4P02, 4P11, 4P14, 4P15, 4P20, 4P22, 4P26, 4P27, 4P32, 4P33, 4P38, 4P39, 4P40, 4P43, 4P45, 4P50, 4P51, 4P52, 4P53, 4P54, 4P65, 4P80, 4P81, 4V00-4V09, 4V10-4V19, 4V20-4V29, 4V30-4V39, 4V70-4V79 or a year 3 politics credit; two elective credits. Honors students may consider the preparation of an honors thesis on a subject of special interest (see POLI 4F99). It should be noted that 3 credits numbered 3(*alpha*)90 or above must be included in all honors degrees.

Combined major programs

For a pass degree the student should take a minimum of four credits in politics over years 2 and 3; at least two of these should be numbered at level 2F90 or higher. For an honors degree, the student must take a minimum of six credits in politics over years 2, 3 and 4; at least four credits should be numbered at level 2F90 or higher and at least two credits at the 400 level.

Students in combined majors are required to take POLI 2P01 (or POLI 2F90) and POLI 2P81. (With the permission of the undergraduate officer, a required methods course in another department may be considered an equivalent for POLI 2P81).

Students in combined honors programs are required to take one credit chosen from either POLI 2F90 (recommended) or POLI 2P01 and any one of POLI 3P04, 3P05, 4P01, 4P02 and 4P03. They are also required to take POLI 2P81 and one of POLI 3P81, 4P80 and 4P81. (With the permission of the undergraduate officer, methods courses which are required in other departments may be considered equivalents for POLI 2P81, 3P81, 4P80 and 4P81.)

Politics and Administrative Studies

Together with Administrative Studies, the department of Politics offers a special program leading to an honors BA in politics and administrative studies. 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 (French 1F90 recommended for those with necessary prerequisites).

Year 2

POLI 2F12; POLI 2P81 or MGMT 1P95; one additional credit in politics, usually 2F90 (POLI 2P01 and one of POLI 3P04, 3P05, 4P01, 4P02, 4P03 may be taken in place of POLI 2F90); ACTG 2P53/2P54; MGMT 2P40; MATH 1P98; one half elective credit (ECON 2P21 recommended).

Year 3

Two credits in politics chosen from POLI 3P11, 3P15, 3P18, 3P26, 3P27, 3P33, 3P52, 3P65, and 3P66; MGMT 3F20 (or MGMT 3P21 and one half MGMT credit); MGMT 3P41/3P42; one elective credit (ECON 3P14/3P15 recommended).

Year 4

POLI 4P50, 4P81 (or POLI 3P81); one credit chosen from POLI 4P01, 4P11, 4P14, 4P15, 4P51, 4P53, 4P65, 4V10-4V19; FNCE 3P92/3P93; MGMT 4P54; one of MGMT 4P40, 4P52, 4P61, 4P62, 4P63, 4P66, 4P67, 4P68, 4P69, 4P72; one elective credit.

Master of Arts (MA) program

The MA program is designed with an emphasis upon comparative political studies. Its focus is upon the relationship between internal politics and external policy with respect to one or more states, and upon the relationship between internal and external influences and the formulation of public policy. The main subject areas covered are those of comparative and international politics, law, administration and studies of political development and modernization. The geographic areas of concentration are Canada, Western Europe, and South and Southeast Asia. The department also offers a special concentration in public administration, including judicial administration and municipal administration streams.

For details about graduate courses and programs, see the *Graduate Calendar*.

Certificate program in public administration

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 full approved courses are required for the certificate.

(For students already holding a degree, see certificate requirements under "Academic Programs and Regulations", page 31.)

Course Program:

Federal/provincial government
POLI 1F90, 2F12, 3F51, 4P52, 4P54;
three elective credits.

Municipal government
UEST 1F90, POLI 1F90, 3F51, 3P11,
4P11, 4P52, 4P54; two elective credits.

Description of courses

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

Note: POLI 1F90, or equivalent, or permission of the instructor, is a prerequisite for admission to all other politics courses.

POLI 1F90
Introduction to politics
An introduction to the basic concepts and institutions of political systems and to 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
A study of the 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 focusing on the characteristics of the international system, the process of foreign policy formulation in individual states, and the means of acting internationally.
Not open to students with credit in POLI 2P22(222hc) or 2P24(224hc).
Lectures, seminar, 3 hours per week.

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*.
Not open to students with credit in POLI 200, 291hc or 292hc.
Lectures, seminar, 3 hours per week.

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 government and politics of the U.S.S.R.
A study of political institutions and processes of the Soviet Union and of the historical, ideological, geographic and demographic factors which shape Soviet society. Special attention will be given to nationalism and ethnic tensions, economic debates, evolution of societal values and behavior, leadership composition and replacement, and forces affecting stability and division within the country.
Lectures, seminar, 3 hours per week.

POLI 2P42
The government and politics of China
A study of political institutions and processes of the Chinese People's Republic.

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.
Not open to students with credit in POLI 260hc.
Lectures, seminar, 3 hours per week.

POLI 2P45
The government and politics of the United Kingdom
A study of 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.
Not open to students with credit in POLI 215hc.
Lectures, seminar, 3 hours per week.

POLI 2P46
The government and politics of the United States
A study of 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.
Not open to students with credit in POLI 216hc.
Lectures, seminar, 3 hours per week.

POLI 2P81
Empirical political analysis
An introduction to the use of empirical methods in the study of politics. Topics include: scientific explanation and its limitations; concepts and measurement; sources of data; causal inference and

Politics

research design; basic statistical techniques; and the use of computers in political analysis. No background in statistics or computer science is required.

Not open to students with a credit in POLI 299 or 205hc.

Lectures, seminar, 3 hours per week.

POLI 2P96

Leadership development

An examination of good leadership and the ways we can lead well in the politics of everyday life. Class activities draw on personal experience and theories of empowerment to help develop abilities to listen effectively, speak in public, oppose oppression, resolve conflicts, survive criticism, support others, and share visions of a better world.

Enrolment limited to thirty students.

Not open to students with credit in POLI 3V70(374hc).

Seminar, workshop, small groups, 4 hours per week.

POLI 2V40-2V49

Government and politics of a selected nation state

An examination of 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? This course examines different forms of government, their origins, and their effects on people's lives. We will compare systems 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.

This course is a prerequisite for most fourth year courses in comparative politics.

Lectures, seminar, films, 4 hours per week.

POLI 3F51

Canadian public administration (also offered as MGMT 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.

Prerequisite: POLI 2F12(212) or permission of the instructor.

Not open to students with credit in POLI 3P50.

Lectures, seminar, 3 hours per week.

POLI 3P04

Politics and morality

Contrasting accounts of the extent to which justice or other moral principles can be observed in political life or in the conduct of political leaders and states.

Prerequisite: POLI 2P01(201hc) or POLI 2F90(290) or permission of the instructor.

Seminar, 3 hours per week.

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.

Not open to students with credit in POLI 350 or 359hc.

Lectures, seminar, 3 hours per week.

POLI 3P15

Politics in Ontario

An examination of major aspects of political life in Ontario, including province-building, voting behavior, party systems, policy-making and administrative apparatus.

Prerequisite: POLI 2F12(212) or permission of the instructor.

Not open to students with credit in POLI 314hc.

Seminars, 3 hours per week.

POLI 3P16

Politics in Quebec

An examination of Quebec'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 Quebec's impact on Canadian federalism.

Prerequisite: POLI 2F12(212), or permission of the instructor.

Lectures, seminar, 3 hours per week.

POLI 3P17

Politics and the mass media in Canada

(also offered as COMM 3P17)

An examination of 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, including the division of powers and the protection of civil liberties (both before and after the Charter of Rights). An examination of the court system from both a legal and political perspective, including issues and consequences of their actions.

Not open to students with credit in POLI 231hc.

Lectures, seminar, 3 hours per week.

POLI 3P19

The Canadian judicial process

A continuation of POLI 3P18, with particular emphasis on new developments under the Charter of Rights.

Prerequisite: POLI 3P18 or 231hc.

Lectures, seminar, 3 hours per week.

POLI 3P24

International politics of the Third World

An examination of 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 consequences of Third World quests for independence, identity, development, and dignity.

Prerequisite: POLI 2F20(220) (or equivalent) or permission of the instructor.

Not open to students with credit in POLI 375hc taken in 1985/86.
Seminars, 3 hours per week.

POLI 3P26

International law

A study of principles of international law and their application in international politics.

Lectures, seminar, 3 hours per week.

POLI 3P27

International organization

An analytical study of principles and problems of international and regional organizations and of their application to international politics. Recommended as preparation for POLI 3P26.

Lectures, seminar, 3 hours per week.

POLI 3P28

Canadian foreign policy

An examination of the foreign policy formulation process in Canada with a view to identifying significant factors, both domestic and external, which contribute to the shaping of overall and specific policy objectives.

Prerequisite: POLI 2F12(212) or 2F20(220).

Not open to students with credit in POLI 425hc.

Seminars, 3 hours per week.

POLI 3P29

Canadian-American relations

An examination of Canadian-American relations from the perspective of international politics. Topics include the management of bilateral relations as an intergovernmental process, trade and transborder business activity, environmental issues, and defence.

Prerequisite: POLI 2F20(220) (or equivalent) or permission of the instructor.

Not open to students with credit in POLI 375hc taken in 1985/86.

Lectures, seminar, 3 hours per week.

POLI 3P33

The state and economic life

An introduction to political economy and the role of the state. Topics

include: the development of political economy, especially the ideas of Smith, Marx and Keynes; the current debate among radicals, neo-conservatives, Christians and conservationists; and such policy issues as free trade, population, stagflation, militarism, inequality, multinational corporations, government regulation, and environmental protection.

Lectures, seminar, 3 hours per week.

POLI 3P40

Communist political systems

A comparison of selected states which define their systems as Marxist-Communist. This course analyzes the impact of geographical, historical, demographic, economic, and cultural differences on the functioning of state institutions, on political behavior and on ideological variations.

Prerequisite: POLI 3F30(330) or POLI 2P41/2P42(241hc/242hc) which may be taken concurrently, or permission of the instructor.

Lectures, seminar, 3 hours per week.

POLI 3P43

Politics in the Third World

The comparative study of political institutions and processes of selected developing countries. Topics include such issues as: 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.

Prerequisite: POLI 3F30(330) or POLI 2P42/2P43(242hc/260hc) which may be taken concurrently, or permission of the instructor.

Not open to students with credit in POLI 338hc.

Lectures, seminar, 3 hours per week.

POLI 3P50

Introduction to public administration

(also offered as MGMT 3P50)
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.

Prerequisite: POLI 1F90(190).

Not open to students with credit in POLI(MGMT) 3F51 or POLI 351(MGMT 320).

Lectures, seminar, 3 hours per week.

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.

Prerequisite: POLI 3F51(351) (MGMT 3F20) or POLI 3P50(MGMT 3P21) or permission of the instructor.

Not open to students with credit in POLI 375 in 1986/87.

Lectures, seminar, 3 hours per week.

POLI 3P65

Introduction to public policy

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.

Prerequisite: POLI 2F12(212) or 3F51(351) or 3P50.

Lectures, seminar, 3 hours per week.

POLI 3P66

Environmental policy, law and administration

An examination of public policies, laws and agencies for the protection and management of the Canadian environments, both natural and man-made.

Not open to students with credit in POLI 352hc.

Lectures, seminar, 3 hours per week.

POLI 3P71

Gender, sex and politics

An examination of theoretical and practical issues in the relationships among gender, sex and politics such as

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sexual equality and its nature and implications for public and private life. Lectures, seminar, 3 hours per week.

POLI 3P77

Politics and literature

(also offered as COMM 3P77)

An examination of politics in literature, especially in selected novels and plays. The seminar emphasizes political issues and insights drawn from literary works. Some attention is given to the differing expectations of authors, literary critics, and students of politics. Not open to students with credit in 376hc.

Seminars, 3 hours per week.

POLI 3P81

Studying political participation

An examination of theories which attempt to explain political participation, and their application to the study of the political activities of the Canadian public. Students will be introduced to multivariate statistical techniques and the use of the computer in political research, and will employ these tools in their own research papers on political participation in Canada. Prerequisite: POLI 2P81(205hc) or POLI 299.

Not open to students with credit in POLI 309hc.

Lectures, seminar, 3 hours per week.

POLI 3V00-3V09

Politics and philosophy

(formerly POLI 3P05)

Exploration of the philosophic issues raised by various questions of immediate importance in contemporary moral and political life.

Prerequisite: POLI 2P01(201hc) or 2F90(290) or 3P04 or permission of the instructor.

Seminars, 3 hours per week.

POLI 3V70-3V79

Special topics in politics

An examination of 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 officer about topics, regulations, and a faculty adviser before registration.

Prerequisite: year 4 honors standing, or permission of the instructor.

POLI 4P01

The philosophy of law

Traditional and contemporary accounts of law and of their implications for issues of contemporary concern.

Prerequisite: year 4 honors standing, or permission of the instructor.

Seminars, 3 hours per week.

POLI 4P02

Principles of classical political philosophy

An examination of the character of pre-modern political philosophy through the careful analysis of 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 from that of modernity.

Prerequisite: year 4 honors standing, or permission of the instructor.

Seminars, 3 hours per week.

POLI 4P11

Issues in local government and politics

An intensive examination of selected issues in local government and politics. Topics may include regional and metropolitan government, provincial-municipal relations and theories of local government.

Prerequisite: year 4 honors standing with credit in POLI 3P11(359hc) or permission of the instructor.

Not open to students with credit in POLI 459hc.

Seminars, 3 hours per week.

POLI 4P14

Federalism in Canada

A study of aspects of the Canadian federal system. Specific topics will vary from year to year, but may include some of: 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.

Prerequisite: Year 4 honors standing or permission of the instructor.

Seminars, 3 hours per week.

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 contemporary 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.

Prerequisite: year 4 honors standing or permission of the instructor.

Not open to students with credit in POLI 413hc in 1986/87.

Seminars, 3 hours per week.

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 misuse of international law by various actors as a means of co-ordinating international relations; and the difficulties of organizing effective international action.

Prerequisite: year 4 honors standing and one full course in international relations, or permission of the instructor.

Seminars, 3 hours per week.

POLI 4P22**Foreign policies of the great powers**

An examination of factors shaping the foreign policies of selected major powers along with the techniques adopted to achieve policy goals.

Prerequisite: year 4 honors standing, or permission of the instructor.

Seminars, 3 hours per week.

POLI 4P26**International politics and national security**

The study of threat and use of armed forces, conventional and nuclear, in the international system. The dynamics of deterrence, coercion and arms races will be examined, along with problems of arms control and non-violent conflict resolution.

Prerequisite: POLI 2F20(220) (or equivalent) and year 4 honors standing, or permission of the instructor.

Seminars, 3 hours per week.

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. Prerequisite: year 4 honors standing, or permission of the instructor.

Not open to students with credit in POLI 325hc.

Seminars, 3 hours per week.

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.

Prerequisite: POLI 3F30(330) and year 4 honors standing, or permission of the instructor.

Not open to students with credit in POLI 435hc taken between SE 1979 and WE 1982.

Seminars, 3 hours per week.

POLI 4P33**Comparative federalism**

An examination of the theory and practice of federalism as a system of

government. Though emphasis will be upon the United States, Canada, and Australia, other applications of the federal principle may also be considered.

Prerequisite: year 4 honors standing with POLI 2F12 or 2P46 or permission of the instructor.

Seminars, 3 hours per week.

POLI 4P38**National integration and separatism**

A comparative examination of national integration and separatism in multi-national states of Europe, Africa and Asia. Topics include the sources of group identity, methods of political integration, and the dynamics of separatist movements.

Prerequisite: POLI 3F30(330) and year 4 honors standing or permission of the instructor.

Seminars, 3 hours per week.

POLI 4P39**Elites and power**

An examination of the basis 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.

Prerequisite: POLI 3F30(330) and year 4 honors standing or permission of the instructor.

Seminars, 3 hours per week.

POLI 4P40**Problems of communism**

Through assigned reading, research design, and research paper, the course explores problems in the field of communist studies.

Prerequisite: POLI 3F30(330) and year 4 honors standing, or permission of the instructor.

Lectures, tutorial, seminar, 3 hours per week.

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.

Prerequisite: POLI 3F30(330) and year 4 honors standing, or permission of the instructor.

Not open to students with credit in POLI 461hc.

Lectures, tutorial, seminar, 3 hours per week.

POLI 4P45**Western European politics**

A comparative study of political institutions and processes of selected states in Western Europe.

Prerequisite: POLI 3F30(330) and year 4 honors standing, or permission of the instructor.

Not open to students with credit in 417hc.

Seminars, 3 hours per week.

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.

Prerequisite: POLI(MGMT)3F51 or POLI 351 or MGMT 320 or POLI(MGMT) 3P50 and year 4 honors standing.

Seminar, 3 hours per week.

POLI 4P51**Public administration theory**

An examination of selected major issues in the theory of public administration.

Prerequisite: year 4 honors standing, or permission of the instructor.

Seminars, 3 hours per week.

POLI 4P52**Personnel and financial administration in the public sector**

(also offered as MGMT 4P52)

This course focuses on 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

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personnel processes and problems as recruitment, selection, training and affirmative action.

Prerequisite: POLI(MGMT)3F51 or POLI 351 or MGMT 320 or POLI(MGMT) 3P50 and year 4 honors standing, or permission of the instructor.

Not open to students with credit in POLI 448hc or 452 or 454hc.
Seminars, 3 hours per week.

POLI 4P53

Comparative public administration

A study of the theory of comparative public administration and a comparative analysis of administrative processes, institutions and problems in selected states.

Prerequisite: year 4 honors standing, or permission of the instructor.
Lectures, seminar, 3 hours per week.

POLI 4P54

Business-government relations (also offered as MGMT 4P54)

This course focuses on 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.

Prerequisite: POLI(MGMT)3F51 or POLI 351 or MGMT 320 or POLI(MGMT) 3P50 and year 4 honors standing, or permission of the instructor.
Not open to students with credit in POLI 449hc or 452.
Seminars, 3 hours per week.

POLI 4P65

Public policy formulation in Canada

An evaluation of the contribution of political and administrative structures and processes to the definition of problems, selection of solutions and implementation of policies in selected areas in Canadian politics.

Prerequisite: year 4 honors standing, or permission of the instructor.

Not open to students with credit in POLI 412hc.

Seminars, 3 hours per week.

POLI 4P80

Approaches to the study of politics

A survey of some of the theoretical approaches to the study of politics employing major statements of each approach, critical evaluations and examples of the approach applied to research in comparative or international politics.

Prerequisite: year 4 honors standing, and permission of department chairperson.

Not open to students with credit in POLI 405hc.

Seminars, 3 hours per week.

POLI 4P81

Public policy analysis

An examination of the conceptual framework and quantitative techniques which are being used in efforts to improve public sector decision-making, planning and policy-making. Topics include: theories of decision-making, rationality and uncertainty, problem definition, forecasting and modelling, cost-benefit analysis, decision-rules, policy implementation and policy evaluation.

Prerequisite: year 4 honors standing, or permission of the instructor.

Not open to students with credit in POLI 408hc.

Seminars, 3 hours per week.

POLI 4V00-4V09

Selected problems in political philosophy

(formerly POLI 4P03)

A particular writer, work or theoretical problem in political philosophy will be carefully examined.

Prerequisite: year 4 honors standing, or permission of the instructor.

Seminars, 3 hours per week.

POLI 4V10-4V19

Issues in Canadian politics

(also offered as MGMT 4V90-4V99 and ECON 4V80-4V89)

A course structured by a faculty member having specialized interest in an area within the discipline, normally

offered on an experimental basis.

1988-89: (4V14) Public policy: advice and processes

(also offered as MGMT 4V94 and ECON 4V84)

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.

Prerequisite: restricted to year 4 students; consent of the chairperson and supervising faculty member.
Seminars, discussion, guest lecturers, 3 hours per week.

POLI 4V20-4V29

Selected problems in international relations

Selected problems and issues drawn from both the system and nation-state levels of international politics.

Prerequisite: year 4 honors standing or permission of the instructor.
Seminars, 3 hours per week.

POLI 4V30-4V39

Selected problems in comparative politics

A comparative study of selected political institutions, processes or policies in various states.

1988-89(4V31) Mass media in developed federal states

An examination of the interaction of the federal states and broadcasting systems in selected federal states. An analysis of the federal system of government and the broadcasting policy formulation and implementation processes in each state.

Prerequisite: POLI (COMM) 3P17 or POLI 3F30 and year 4 honors standing, or permission of the instructor.
Seminar, 3 hours per week.

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 officer.

Prerequisite: year 4 honors standing, or permission of the instructor.

Pre-professional studies for the Health 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 1F85 or 1F93; PSYC 1F90; MATH 1P97/1P98; one humanities context credit.

Year 2

BIOL 2F01; one credit from BIOL 2P90, 2P91, or 2P98; PHYS 1F20 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, 3P49, 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 W. Cade, 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 biology courses listed as year 3 options, BIOL 2F03, CHEM 2P98, 3P20 and 3P21. Year 2 and year 3 psychology 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 years should consider choosing their electives from PHED 1P91/1P92 for year 2, and PHED 2P02, 2P03, 2P04, 2P70, 3P04 and 3P92 for year 3.

Canadian Memorial Chiropractic College.

The basic course requirements for entry into CMCC are fulfilled in the first two years of the program. Students completing the three year program should consider choosing their electives from PHED 1P91/1P92 for year 2, and PHED 2P02, 2P03, 2P04, 2P05, 2P70 and 3P04 for year 3. Second and third year psychology courses and the biology courses listed as year 3 options are also recommended.

Psychology

Officers of instruction

Chairperson

J.R. Adams-Webber
R.D. Ogilvie (after July 1, 1988)

Professors

J.R. Adams-Webber
J.G. Benjafield
H.T. Hunt
J.J. Lavery
D.S. Lordahl
R.D. Ogilvie
E.W.G. Pomeroy
S.W. Sadava
S.J. Segalowitz

Associate professors

N. Johnston
J. Mitterer
J.M. Preston
L. Rose-Krasnor
M. Smith
P.D. Tyson

Assistant professors

K. Belicki
H.W. Bradley
D. DiBattista
J. Dywan
D. MacLean
P. Ramm

Sessional instructor

M. Jordan

General information

Mackenzie Chown complex B325

General prerequisites

Psychology 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 psychology 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 chairperson are 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.

Pass program

Pass students are required to take PSYC 1F90, 2F23, and five other credits in psychology, three of which should be at the year 3 level.

Year 1

PSYC 1F90, one humanities and one science context credit; two elective credits.

Year 2

PSYC 2F23; two credits in psychology numbered 2(alpha)00 - 2(alpha)99; two elective credits.

Year 3

Three credits in psychology numbered 2(alpha)90 - 2(alpha)99; two elective credits.

Note:

PSYC 3F40 is required in an honors degree in psychology and should be taken in year 3.

Honors program

Honors students are required to take PSYC 1F90, 2F23, 3F40, 4P92, 4P93, two additional year 4 credits in psychology.

Years 1 and 2

As in pass program.

Year 3

PSYC 3F40, two credits in psychology numbered 2(alpha)90 - 3(alpha)99; two elective credits.

Year 4

(Note which courses can be taken for year 4 credit.)

PSYC 4P92/4P93; two credits in psychology numbered 3P82 or higher, excluding PSYC 3P88, 3P89; two elective credits.

Note:

- 1.) Students may apply to do an intensive individual study in any of the areas described in 4F01, 4F02 and 4F03 if they have already shown particular competence in the area. The subject of study must be chosen in consultation with a faculty member before registering in year 4. Permission of the chairperson and the faculty member is required.
- 2.) Students planning to undertake graduate studies in psychology are urged strongly to take PSYC 4F91.
- 3.) PSYC 3P88 and 3P89 cannot be taken for year 4 credit.

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 7 needed to enter the honors program: CHST 2F10, 3F96, 3P11, 3P23, 3P56, 3P84, 3P88, 3P89.

Psychology 1F90 and 2F23 are required.

Year 4

PSYC 3F40, 4P92/4P93; 2 credits at the year 4 level in psychology (see above); one elective credit.

Combined major programs

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 psychology, 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 psychology, 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 chairperson to avoid duplication of courses.

Description of courses

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.

Prerequisite to all courses in psychology.

Lectures, seminar, 3 hours per week.

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.

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.

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.

PSYC 2F30

An introduction to social psychology

Theories, research and issues of contemporary social psychology; topics such as person perception, group structure and dynamics, aggression, altruism, social attitudes, conformity, obedience and prejudice.

Lectures, seminar, 3 hours per week.

PSYC 2F35

Motivation

Focus on principles of change in activity; topics include: achievement, intrinsic motivation, work satisfaction, personal causation, meaning and purpose, curiosity and exploration, social and biological motives.

Lectures, seminar 3 hours per week.

PSYC 2F45

Learning

A presentation of variables and/or conditions which contribute to the learning process; the course will include a survey of the basic experimental findings and theoretical issues related to learning. An emphasis will be placed on learning in nonhuman animals.

Not open to students with credit in PSYC 335.

Lectures, seminar, 3 hours per week.

PSYC 2F85

Psychology of personal development

Practical applications of areas of psychology which have relevance to

personal development. Interpersonal communication, personal change processes, problem-solving/decision-making strategies and life/career planning will each be explored through conceptual and experiential methods. Small group activities are an integral part of the course and successful completion requires active participation.

Enrolment limited to seventy students. Lectures, 1 hour per week; small group lab, 2 hours per week.

PSYC 2F90

Cognition

The acquisition and utilization of knowledge; theories of memory, problem solving and creative thinking; language and thought.

Lectures, seminar, 3 hours per week.

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.

PSYC 2F95

Applied psychology

An introduction to the application of psychology in business and industry. Modern techniques of psychological record processing on computer systems will be stressed. Computer problems will be individually suited to the student's computer knowledge.

Prerequisite: admission limited to 20 students, to be determined by academic standing.

Lectures, lab, 4 hours per week.

PSYC 2F97

Experiential psychology

The study of subjective experience (altered states of consciousness) and methods as an alternate way of 'doing' psychology. Phenomena of dreams,

Psychology

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 psychology, social science and psychiatry, as well as holistic-constructivist approaches to cognition and symbol formation.
Lectures, seminar, 3 hours per week.

PSYC 2F98

Physiological psychology

Physiological psychology deals with the interaction of brain and behavior in man and animals. The neuron, sensory and motor systems, sleep and arousal, and physiological aspects of emotion, motivation, learning and consciousness will be studied. Labs will be on human psychophysiological recording techniques. Research projects in lieu of essays will be encouraged. Enrolment limited by lab space to 24 students. If restriction becomes necessary, it will be based on overall average.
Lectures, labs, 4 hours per week.

PSYC 2P94

Introduction to psychological measurement

(formerly PSYC 3P15)

An introduction to measurement principles and techniques, with particular emphasis on issues in the construction, administration and evaluation of tests and other assessment tools. This course will include treatment of reliability and validity concepts, and the role of evaluation in experimental, educational and observational contexts.

Prerequisite: PSYC 2F23(223) recommended.

Not open to students with credit in PSYC 330 or 3P15.

Lectures, lab, seminar, 3 hours per week.

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, seminar, 3 hours per week.

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, seminar, 3 hours per week.

PSYC 3F11

Issues in developmental psychology

(also offered as CHST 3F11)

Examination of some current issues in developmental psychology, of recent experimental research on them, and theoretical approaches involved. The student will study human development from an integrated approach, including biological as well as psychological viewpoints.

Prerequisite: PSYC 2F10(210) or three psychology credits beyond PSYC 1F90(190).

Lectures, seminar, 3 hours per week.

To be offered for the last time in spring evening 1988.

PSYC 3F17

Child development

(formerly PSYC 2F10)

Theories and research on the normal development of children ages 2-12 years; topics include cognitive, language, social, emotional, moral and physical development as well as Canadian contributions to child psychology.

Prerequisite: PSYC 2F12 or third year standing.

Not open to students with credit in PSYC(CHST) 2F10(210).

Lectures, seminar, 3 hours per week.

PSYC 3F20

Psychopathology

Major theories which have been developed to explain aberrant behavior are considered and evaluated. Emphasis is upon integration of contemporary research findings with theory in formulating a nosological system and biosocial model of psychopathology.
Lectures, seminar, 3 hours per week.

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.

Prerequisite: PSYC 2F23(223).

Lectures, lab, 5 hours per week.

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 infrahuman species.

Not open to students with credit in PSYC 240.

Lectures, seminar, lab, 3 hours per week.

PSYC 3F46

The psychology of eating

(formerly PSYC 2F93)

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.

Not open to students with credit in PSYC 2F93.

Lectures, seminar, 3 hours per week.

PSYC 3F49**Directed readings**

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.

Prerequisite: third year standing and permission of the instructor.
Seminars, 3 hours per week.

PSYC 3F55**Perception and consciousness**

Language shapes our attention, memory, and self-concept. Western approaches to consciousness, ranging from hemispheric modes to altered states, are also shaped by language and clarify the limits of language. The second half will shift the cultural and linguistic perspective to non-western conceptions of psychology. These more developed traditions include Buddhism, Yoga, Taoism, Sufism, and aspects of North American Indian culture.

Lectures, seminar, 3 hours per week.

PSYC 3F91**Neuroscience**

A study of 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.

Prerequisite: PSYC 2F98(298).
Lectures, lab, 3 hours per week.

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 problems, i.e. the child who is mentally retarded, perceptually handicapped, etc. In a survey of current research on cognitive stimulation, attention will be

given to the progress of the gifted child. Students will be encouraged to fulfil a prearranged practicum working with an atypical child. Field trips will be arranged.

Enrolment to be limited to 80 students. If restriction becomes necessary, this will be made on the basis of overall average.

Not open to students with credit in PSYC(CHST)300.

Lectures, seminar, 3 hours per week.

PSYC 3F97**Personality assessment and research**

This course will deal with a variety of 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.

PSYC 3P11**Theories in developmental psychology**

(formerly part of PSYC(CHST)3F11) (also offered as CHST 3P11)

Examination of some current issues in developmental psychology, of recent experimental research on them, and theoretical approaches involved. The student will study human development from an integrated approach, including biological as well as psychological viewpoints.

Prerequisite: PSYC 2F10(210) or PSYC 2F12 or permission of the instructor.

Not open to students with credit in PSYC(CHST) 3F11.

Lectures, seminar, 3 hours per week.

Note: PSYC(CHST) 3F11 will be offered for the last time in Spring Evening, 1988.

PSYC 3P16**Infant development**

The development of infants from the

pre-natal period through the second year of life. Major topics to be considered will be perception, cognition, attachment and social development. Additional topics of special interest, including at-risk infants and infant intervention programs, will be included.

Prerequisite: PSYC(CHST) 2F10(210) or PSYC 2F12, or permission of the instructor.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: PSYC(CHST) 2F10(210) or PSYC 2F12 or permission of the instructor.

Not open to students with credit in PSYC 2F96 or 387hc.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: PSYC 3P18 or permission of the instructor.

Not open to students with credit in PSYC 2F96 or 387hc.

Lectures, seminar, 3 hours per week.

PSYC 3P23**Psychology of parenting**

(also offered as CHST 3P23)

The determinants, varieties and consequences of parenting. The course

Psychology

will examine motivations for becoming a parent, individual differences in parenting styles, and the effect of parents on children's development. The course focuses primarily on research and theory, although applied topics such as the effectiveness of different disciplinary techniques will also be considered.

Lectures, seminar, 3 hours per week.

PSYC 3P41

Computer data analysis

A hands-on introduction to computer packages for analyzing psychological data. The theory of advanced techniques will be explained in lectures and packages such as SPSS will be used in labs.

Prerequisite: PSYC 2F23(223).

Lectures, 2 hours per week, lab, 2 hours per week.

PSYC 3P56

Biological perspectives in development psychology

Examination of current research on the role of biological factors in psychological development. Topics include the role of genes and early biological environment in normal and abnormal development, and developmental neuropsychology.

Lectures, seminar, 3 hours per week.

PSYC 3P77

Evolutionary bases of human behavior

(formerly PSYC 3P22)

How evolution shaped human thought and behavior. Specific topics to be examined include the evolution of altruism, aggression, sexuality, consciousness, the family as an adaptive system, and the interaction of biology and culture.

Prerequisite: PSYC 2F23; may be taken concurrently

Not open to students with credit in PSYC 3F30 or 3P15 or 3P22.

Lectures, seminar, 3 hours per week.

PSYC 3P78

Nature, nurture and human development

(also offered as CHST 3P75)

An examination of the interaction of

genetic and environmental influences on human development. Topics to be examined include biosocial determinants of morphology, personality and intelligence; family, twin and adoption studies; the plasticity of human development.

Lectures, seminar, 3 hours per week.

PSYC 3P80

Psychology of interpersonal behavior

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.

Prerequisite: PSYC 2F30(230) recommended.

Not open to students with credit in PSYC 396.

Lectures, seminar, 3 hours per week.

PSYC 3P81

Health psychology

The study of 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.

Not open to students with credit in PSYC 3F95.

Lectures, seminar, 3 hours per week.

PSYC 3P82

Psychology of the arts

(also offered as FINA 3P82)

An examination of the 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. May be taken as a third or fourth year course.

Lectures, seminar, 3 hours per week.

PSYC 3P83

Adult development

(formerly PSYC 3P93)

Focus will be on theories and methods of life-span development as they apply to the special issues that emerge during the adult years. Topics include physiological, cognitive, sexual, social and moral development as related to the tasks of young adulthood and middle age.

Prerequisite: PSYC(CHST) 2F10(210) or PSYC 2F12 or third year standing, or permission of the instructor.

Not open to students with credit in PSYC 3F91 or 3P93.

Lectures, seminar, 3 hours per week.

PSYC 3P84

Advanced topics in social development

(also offered as CHST 3P84)

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.

Prerequisite: PSYC(CHST) 2F10(210) or 2F12.

Not open to students with credit in CHST 392 or PSYC(CHST) 383.

Lectures, seminar, 3 hours per week.

PSYC 3P85

Theories of personality: Freud and Jung

A study of the 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.

May be taken as a third or fourth year credit.

Not open to students with credit in PSYC 390.

Lectures, seminar, 3 hours per week.

PSYC 3P86**Theories of personality: developments in psychodynamic and transpersonal psychology**

Major developments in the psychoanalytic traditions will be considered, along with problems of research operationalization. Topics to be covered will be selected from among: Sullivan and Kelly's interpersonal-cognitive perspective; British psychoanalysis from Melanie Klein to Winnicott; Hillman's archetypal psychology; and holistic-organismic approaches. The possibly unique relation of depth psychologies to numinous experience will also be considered.

May be taken as a year 3 or year 4 credit.

Not open to students with credit in PSYC 390.

Lectures, seminar, 3 hours per week.

PSYC 3P88**The psychology of reading**
(also offered as CHST 3P88)

A study of the 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.

Recommended background: PSYC 2F90(290) or 3F08(308) or 3F11(311) or 3P11.

Prerequisites: PSYC 1F90(190), and one of PSYC 2F23(223) or MATH 1F92(192) or SOCI 2F10(230) (may be taken concurrently).

Lectures, seminar, 3 hours per week.

PSYC 3P89**Psychology of computers in education**

(also offered as CHST 3P89)

A study of 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. Recommended background: PSYC 2F90(290) or 3F08(308) or 3F11(311) or 3P11.

Note: This is not a computer program-

ming course.

Prerequisites: PSYC 2F23(223) or MATH 1F92(192) or SOCI 2F10(230) (may be taken concurrently).

Lectures, seminar, 3 hours per week.

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 the dementia and other physiological factors that affect cognitive and personality functioning, personal and community support systems, institutionalization, and palliative care.

Prerequisite: PSYC 3P94 or permission of the instructor.

Lectures, seminar, 3 hours per week.

PSYC 3P92**Drugs and behavior**

(formerly part of PSYC 3F92)

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.

Not open to students with credit in PSYC 299 or 3F92.

Lectures, 3 hours per week.

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.

Prerequisite: PSYC(CHST) 2F10(210) or PSYC 2F12 or third year standing, or permission of the the instructor.

Lectures, seminar, 3 hours per week.

PSYC 3P95**Stress**

(formerly part of PSYC 3F95)

Examination of stress in terms of occupations, environments, life events; methods of appraisal, coping strategies and health factors. Emotion is viewed both as part of the stress response and

as a separate source of motivation.

Cognitive and behavioral factors in the experience and expression of specific emotions are also explored.

Not open to students with credit in PSYC 3F95(395) or 350.

Lectures, seminar, 3 hours per week.

PSYC 3P98**Neuropsychology I**

An introduction to the study of how higher functions are represented in the human brain. An exploration of clinical disorders of language, knowledge and actions due to brain damage, developmental disorders such as dyslexia, as well as the effects of early brain damage, reorganization of brain function and brain plasticity. No previous knowledge of physiology is required.

Lectures, seminar, 3 hours per week.

PSYC 3P99**Neuropsychology II**

In this course we focus on the functional differences between the left and right hemispheres of the brain. Topics include the role of hemisphere asymmetries in handedness, split-brain procedures, language and visuospatial skills, music and art, creativity, emotions and rational thinking, and the social and education implications of brain lateralization. No background in physiology is required.

Lectures, seminar, 3 hours per week.

Note:

The topics discussed each year in 4F01, 4F02, and 4F03 will vary.

PSYC 4F01**Issues in personality, social and developmental psychology**

Analysis of special problems such as behavior change, social attitudes, social communication, etc.

Prerequisite: admission to year 4 and permission of the instructor.

Directed readings, to be arranged in advance with appropriate faculty.

Psychology

PSYC 4F02

Special problems in comparative and physiological psychology

The study of how some brain functions relate to behavior and subjective experience.

Prerequisite: admission to year 4 and permission of the instructor.

Directed readings; to be arranged in advance with appropriate faculty.

PSYC 4F03

Advanced seminar in learning, thinking, cognition and consciousness

Special topics in these areas will be discussed each year.

Prerequisite: admission to year 4 and permission of the instructor.

Directed readings, to be arranged in advance with appropriate faculty.

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.

PSYC 4F91

Thesis tutorial

A research project carried out with a faculty adviser. Students must consult the chairperson regarding both their program and an adviser before registration week.

Prerequisite: PSYC 3F40(340).

PSYC 4P20

Emotion

Theories of emotion in psychology. Emphasis on emotions as a source of motivation and adaptation.

Prerequisite: year four standing or permission of the instructor.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: PSYC 3F92(392) or 3P92 and fourth year standing.

Lectures, seminar, 3 hours per week.

PSYC 4P56 and 4P57

These are human relations laboratory courses which emphasize study of the interpersonal processes which facilitate constructive change in individuals and groups. These courses are intended for persons with a professional interest in facilitating change in individuals and groups and are conducted as training groups which require the active participation of the student.

Enrolments are strictly limited.

Permission of the instructor must be obtained through separate application before registering for either of these courses.

PSYC 4P56

The therapeutic relationship

The therapeutic relationship is a skills-oriented laboratory which focuses on the relationship qualities which discriminate between constructive and destructive interactions. Applications to counselling, psychotherapy and teaching are considered.

PSYC 4P57

Group processes

Group processes explores such issues as group climate, group development, member contributions, decision making and the leader's role in small groups. The major vehicle for learning is the examination of the processes of the class group.

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.

Prerequisite: admission to year 4 or permission of the chairperson and instructor.

Lectures, seminar, 3 hours per week.

PSYC 4P93

Honors seminar

A comprehensive look at the fundamental issues in the various areas of psychology, with various faculty members responsible for specific areas.

Prerequisite: admission to year 4 and PSYC 4P92(492hc).

Not open to students with credit in PSYC 490.

Lectures, seminar, 3 hours per week.

PSYC 4P94

Thesis seminar

A seminar in which thesis students will undertake a detailed study of current research in various areas of psychology.

Prerequisite: year four standing.

Co-requisite: PSYC 4F91.

Seminar, 3 hours per week.

Recreation and Leisure Studies

Officers of Instruction

Chairperson
J.K. Larsen

Professor
D. Ng

Associate professors
A.M. Guilmette
J.K. Larsen

Assistant professor
G.S. Nogradi

Lecturers
G.M. Laurence
J.K. Yardley

General information

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 will be required to take introductory courses in community recreation programming, recreation for special populations, outdoor recreation, recreation administration, and leisure studies. All students must complete at least one credit from each of the three groupings of core and context: humanities, social sciences, sciences (see page 27). In addition to required courses students must elect at least three credits in recreation and leisure studies and four credits outside of recreation and leisure studies. Creative individual and group leisure service planning and administration will be emphasized in course work and the required third year field placement.

Upon completion of all requirements, graduating students will be awarded the degree BRLS, Bachelor of Recreation and Leisure-Studies.

Challenge for credit

In conjunction with page 31 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.

Pass program

New Program

Year 1

One credit in recreation and leisure studies at year 1 level (RECL 1P00, 1P02, 1P06, 1P10), one social science context elective, one science or humanities context elective, two elective credits. (See Note 1.)

Note 1.

Students majoring in recreation and leisure studies are encouraged to take two credits in recreation and leisure studies in their first year. In accordance with page 26 of the Brock University 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 course electives (RECL courses at the 3(alpha)00 level) in recreation and leisure studies until the course is repeated and the mandatory C grade is achieved.

Year 2

One credit in recreation and leisure studies at year 1 level (if not taken in the first year), RECL 2P01, 2P07 plus

one RECL elective credit, one science or humanities context elective (which ever was not taken in year one), one elective credit. (See Note 2.)

Note 2.

Among the first ten credits, students should have completed all four of the required first year classes in recreation and leisure studies.

Year 3

RECL 3P01, 3P05, plus one RECL elective credit, three elective credits. (See Note 3.)

Note 3.

RECL courses may be taken as electives but at least four elective course credits must be taken outside of the department of Recreation and Leisure Studies.

Previous Program

For students who started before 1988

Year 2

RECL 2P00, 2P02, 2P06, 2P07, 2P10, 2P11; one science or humanities context credit (whichever was not taken in year 1); one elective credit (chosen in consultation with adviser).

Year 3

RECL 2P91, 3P05, 3P07, 3P94; and one stream core credit from:
a) Commercial--RECL 3P09, 3P99;
or b) Administrative--RECL 3P00, 3P20;
or c) Outdoor--RECL 3F06;
or d) Therapeutic--RECL 3P02, 3P12; and two elective credits (chosen in consultation with adviser).

Honors program

In addition to honors standing and RECL 3P07, the requirements for admission to the year 4 honors BRLS

Recreation and Leisure Studies

degree include a faculty review. Students are requested to submit a suggested (potential) topic area for the honors project with their application for year 4.

Years 1, 2 and 3

As in pass program, including RECL 3P07.

Year 4

RECL 4F01, 4F05, 4P07, 4P97; two elective credits (chosen in consultation with adviser).

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 1P00, 1P02, 1P06, 1P10, 2P00, 2P01, 2P02, 2P06, 2P07, 2P10, 2P91, 3F06, 3P00, 3P02, 3P03, 3P04, 3P07, 3P09, 3P12, 3P20, 3P94, and 3P99.

It should be noted that there is a limit of five credits in administrative studies, teaching English as a second language 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

A BRLS degree makes students eligible for a wide range of positions in the rapidly expanding leisure services field in such areas as: city recreation and parks departments; YM/YWCAs; community activity programs; leisure services for special populations - the aged, mentally, physically, emotionally, socially and culturally disadvantaged; outdoor recreation programs and camps; company/employee recreation programs, and private recreation clubs and resorts in the tourism/hospitality industry.

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 = conceptual
- 2 = special populations
- 3 = undesignated elective
- 4 = individualized
- 5 = placements
- 6 = outdoor
- 7 = research
- 8 = undesignated elective
- 9 = commercial

RECL 1P00

An introduction to community recreation programs (formerly RECL 2P00)

The principles of recreation program planning and development within a community 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. Field trip fee: approximately \$60.00.

Not open to students with credit in RECL 2P00(200hc).
Lectures, seminar, 3 hours per week, plus field trip.

RECL 1P02

Introduction to recreation for special populations (formerly RECL 2P02)

An investigation of the nature and needs of special populations (e.g. the aged, mentally disadvantaged, physically disadvantaged) in recreational settings. Emphasis will be placed on understanding the normalization process and on the physiological and psychological characteristics of special populations.

Not open to students with credit in RECL 2P02(202hc).
Lectures, seminar, 3 hours per week.

RECL 1P06

Introduction to outdoor recreation (formerly RECL 2P06)

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 recreation practitioner. Field experience fee: approximately \$15.00.

Not open to students with credit in RECL 2P06(206hc).
Lectures, seminar, 3 hours per week plus field experience.

RECL 1P10

Introduction to recreation administration (formerly RECL 2P10)

A study of 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.

Not open to students with credit in RECL 2P10(210hc).
Lectures, seminar, 3 hours per week.

RECL 2P00

Community recreation programs

An introduction to the principles of programming involved in community recreation. Particular emphasis is directed toward differentiating between direct and indirect programming as well as understanding the basis of community development. Field trip fee: approximately \$60.

Prerequisite: RECL 1F91(191).

Not open to students with credit in PHED 293hc.

Lectures, seminar, 3 hours per week plus field trip.

To be offered for the last time in 1988-89.

RECL 2P01

Introduction to leisure studies (formerly part of RECL 1F91)

Leisure concepts and the emerging discipline of leisure studies are introduced in theoretical, historical,

methodological and socio-cultural contexts.

Prerequisite: one credit in RECL.
Not open to students with credit in RECL 1F91(191).

Lectures, seminar, 3 hours per week.

RECL 2P02

Introduction to recreation for special populations

Development of a personal philosophy regarding the nature and needs of special populations in recreational settings. Emphasis will be placed on understanding the normalization process and on the physiological, psychological and cognitive characteristics of special populations. Visits to community programs will be included.

Prerequisite: RECL 1F91(191).

Not open to student with credit in RECL 301hc.

Lectures, seminar, 3 hours per week.

To be offered for the last time in 1988-89.

RECL 2P06

Outdoor recreation

The content of, and relationships among experiential education, the camping movement and outdoor recreation will be examined to familiarize students with the broad scope of activities, practices, and concepts important to the outdoor recreation practitioner today. An adventure based model and a field trip are incorporated to help students understand the multi-faceted nature of outdoor learning and living. Field experience fee: approximately \$15.00.

Prerequisite: RECL 1F91(191), PHED ON01.

Not open to students with credit in PHED 306hc.

Lectures, lab, seminar, 3 hours per week.

To be offered for the last time in 1988-89.

RECL 2P07

Tests and surveys for recreation
Community evaluation and needs assessment to provide research evidence in recreation.

Prerequisite: RECL 1F91(191) or

permission of the instructor.

Lectures, lab, 3 hours per week.

RECL 2P10

Administration of recreation and leisure services

Administrative theory and concepts in relation to the delivery of recreation services with a focus on the volunteer recreation administrator and the role of the professional in the management of volunteer recreation delivery system.

Prerequisite: RECL 1F91(191) and MGMT 1P91/1P92 (191hc/192hc) or permission of the instructor.

Not open to students with credit in RECL 201hc.

Lectures, seminar, 3 hours per week.

To be offered for the last time in 1988-89.

RECL 2P11

The social psychology of leisure and recreation

A study of the social psychological dimensions of human behavior during free time including an examination of lifestyle, social habits and motives for leisure and recreation.

Prerequisite: RECL 1F91(191).

Lectures, seminar, 3 hours per week.

RECL 2P91

Principles of play and leisure

A critical analysis of definitions, concepts and assumptions of classical, recent and modern play and leisure theories. Discussion of implications for individual and group lifestyles, programming, planning and research strategies.

Prerequisites: RECL 2P00(200hc) and 2P11(211hc).

Not open to students with credit in RECL 298hc.

Lectures, seminar, 3 hours per week.

RECL 3F06

Principles and practices in outdoor recreation management

An examination of the principles and practices in the management and leadership of outdoor recreation experiences. In addition to lectures, labs, and seminars, field trips are an integral part of this course. Field trip fee: approxi-

mately \$50.

Prerequisite: RECL 2P06, 2P10.

Lectures, lab, seminar, 3 hours per week.

RECL 3P00

Community development processes in recreation administration

An examination of various theoretical perspectives on community organization and development, as well as methods applicable to the recreation practitioner to facilitate communities in the development of recreation services.

Prerequisite: RECL 2P00(200hc), 2P10(210hc).

Lectures, seminar, 3 hours per week.

RECL 3P02

Recreation programs for 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; the role of the volunteer; building and community accessibility. The major focus will be on program design. A ten hour practicum is included.

Prerequisite: RECL 2P00(200hc), 2P02(202hc), 2P10(210hc).

Lectures, seminar, 3 hours per week.

RECL 3P03

Introduction to recreation services (formerly part of RECL 1F91)

A study of the delivery of recreation services with particular emphasis on contemporary Canadian society.

Not open to students with credit in RECL 1F91.

Lectures, seminar, 3 hours per week.

RECL 3P04

Leisure lifestyle assessment (formerly RECL 2P94)

A study of the physical, psychological and social factors that impact on leisure lifestyle choices.

Not open to students with credit in RECL 2P94(294hc).

Lectures, 3 hours per week.

RECL 3P05

Leisure services fieldwork

Practical experiences in specific leisure service agencies. In addition to course

Recreation and Leisure Studies

work in-leadership, programming and community resource development, students will be placed in an existing community recreation setting.
Prerequisites: RECL 2P00(200hc), 2P10(210hc).
Seminars, 3 hours per week, plus fieldwork.

RECL 3P07

Interpretive analysis of recreation data

Designed to provide recreation majors with the means to understand, evaluate and interpret statistical information. Students will examine inferential decision-making strategies, modes of observation, funding strategies and projective trend analysis.
Prerequisite: RECL 2P07(207hc).
Lectures, lab, 3 hours per week.

RECL 3P09

Commercial leisure services

A study of planning, marketing, development and programming linking leisure services and tourism to the existing and future roles of commercial and private recreation for all ages and incomes. Case studies and selected visits are to be included.
Prerequisites: RECL 2P00(200hc), 2P10(210hc).
Not open to students with credit in RECL 308hc.
Lectures, seminar, 3 hours per week.

RECL 3P12

Leisure and aging

The philosophy and role of leisure throughout life and the development of strategies for education, planning, and counselling.
Prerequisites: RECL 2P00(200hc), 2P02(202hc), 2P10(210hc).
Not open to students with credit in RECL 303hc.
Lectures, seminar, 3 hours per week.

RECL 3P20

Administration problems in recreation

An examination of problems relating to the delivery of recreation services in Canada. Decision-making theories and principles of planning as they apply to selected sectors of the recreation delivery system.
Prerequisite: RECL 2P00(200hc),

2P10(210hc).

Not open to students with credit in RECL 392hc.

Lectures, 3 hours per week.

RECL 3P94

Personalized recreation

The development of specific strategies to enhance the social-emotional development of individuals and the teaching-learning process, leading to a more intimate relationship between teachers or recreation leaders and individuals. There will be emphasis on encouraging the human values of recreation for every person.

Prerequisite: RECL 2P00(200hc), 2P10(210hc).

Not open to students with credit in PHED 394hc.

Lecture, lab, 3 hours per week.

RECL 3P99

Employee services and recreation

The role of recreation when applied to the work setting. The benefits of employee recreation, the types of programs and facilities available, employee fitness, financing, and program evaluation will be studied. Each student will have the opportunity to develop a program applicable to a specific occupational environment.
Field trip fee: approximately \$15.
Prerequisite: RECL 2P00(200hc), 2P10(210hc).

Not open to students with credit in RECL 390hc.

Lectures, seminar, 3 hours per week.

RECL 3V90-3V99

Special studies in recreation and leisure

A series of lectures, seminars and practical experiences offered in specialized areas of recreation and leisure.

Prerequisite: third year standing in RECL or permission of the chairperson.

Spring Evening 1988: (3V96)

Outdoor recreation/therapeutic recreation internship

An internship (minimum of eight weeks) followed by a special project which attempts to link theory to practice.

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.

Prerequisite: year 4 honors standing in RECL.

Not open to students with credit in RECL 402hc.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: year 4 honors standing in RECL.

Not open to students with credit in RECL 292hc.

Seminars, 3 hours per week, plus fieldwork.

RECL 4P07

Experimental design

Development of appropriate and relevant experimental designs in recreation. Students will be expected to propose a research design, engage in literature review and be prepared to submit the design for implementation.
Prerequisite: RECL 3P07(307hc), year 4 honors standing in RECL.

Lectures, seminar, 3 hours per week.

RECL 4P97

Honors project

Intensive, directed, individual study in a topic of inquiry chosen from one of the established RECL streams: therapeutic recreation, commercial recreation, outdoor recreation and managerial recreation, selected in consultation with a faculty adviser.

Prerequisite: RECL 4P07(407hc), year 4 honors standing in RECL.

Seminars, 3 hours per week.

Sociology

Officers of instruction

Chairperson
G.B. Rush

Professors
G.B. Rush
T.H. White

Associate professors
D. Glenday
M.L. Perlman
V.A. Tomovich
W. Watson

Assistant professors
J. Blackwell
A.D. Duffy
D.A. Harrison
A. Meinhard
L.G. Ward

General information

Schmon tower 1006

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 Quebec and the rest of the country, gender relations, ethnic and sex segregation in the workforce, 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.

Pass program

Note: Any student declaring a major in sociology will be assigned a faculty adviser. All majors (pass, honors, single and combined) must have their programs approved by their adviser prior to registration. It is the student's responsibility to consult the adviser concerning his or her program of study.

The following courses are required: SOCI 1F90, 2F01, 2F10, 3F01; three additional sociology credits. For the latter, 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 chairperson. Students considering an honors degree must include SOCI 3F10 in year 3.

Suggested program:

Year 1
SOCI 1F90; one humanities and one science context credit; two elective credits.

Year 2
SOCI 2F01, 2F10, one sociology credit; two elective credits.

Year 3
SOCI 3F01, two sociology credits (SOCI 3F10 is strongly recommended); two elective credits.

Honors program

The following courses are required: SOCI 1F90, 2F01, 2F10, 3F01, 3F10, 4F01 and 4F90 or 4F91. The student is required to take three additional credits in sociology.

Years 1 and 2
As in pass program.

Year 3
SOCI 3F01, 3F10, one sociology credit; two elective credits.

Year 4
SOCI 4F01 and 4F90 or 4F91, one credit in sociology numbered 3(alpha) 90 or above; two elective credits.

Combined major program

Pass program

A student taking a combined major pass program is required to complete five credits in sociology. These will normally include 1F90, 2F01, 2F10, 3F01 and one additional credit.

Honors program

In addition to the requirements for a pass program, combined honors majors must complete SOCI 3F10, 4F01 and 4F90 or 4F91. Equivalent thesis or practicum work in the other discipline may be substituted for SOCI 4F90 or 4F91.

Description of courses

Please note that not all courses are

Sociology

offered in every session. Refer to the applicable term timetable for details.

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

Investigation of 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.

Prerequisite: SOCI 1F90(190).

May be taken concurrently with SOCI 2F10.

Not open to students with credit in SOCI 200, 320 or 421.

Lectures, seminar, 3 hours per week.

SOCI 2F10

Research methods in social relations

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.

Prerequisite: SOCI 1F90(190); may be taken concurrently with SOCI 2F01.

Not open to students with credit in SOCI 230, 231hc or 232hc.

Lectures, lab, 3 hours per week.

SOCI 2F54

The documentary film

(also offered as FILM 2F54)

An examination of the documentary film from its beginnings in photography and the actualités of the Lumières

through cinema vérité and ethnographic cinema. The history, theory and aesthetics of documentary film and its relationship to the culture it documents.

Prerequisite: SOCI 1F90(190), FILM 1F94(194), or permission of the instructor.

Lectures, seminar, 3 hours per week, plus weekly film lab.

SOCI 2P22

Schools and society

Social analysis of educational institutions emphasizing the influence of society on organizational structure, curriculum and goals; schools as formal organizations; the relationship of education to other aspects of society, particularly the occupational and class structures; schools and society in Canada.

Not open to students with credit in SOCI 291hc.

Lectures, seminar, 3 hours per week.

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.

Not open to students with credit in SOCI 248hc.

Lectures, seminar, 3 hours per week.

SOCI 2P31

Political sociology

The social processes underlying political domination and conflict; different state structures such as the voluntary, authoritarian, liberal, democratic, and socialist; interrelationships between political institutions and other social institutions and the nature of oppositions to the established political regimes.

Not open to students with credit in SOCI 218hc.

Lectures, seminar, 3 hours per week.

SOCI 2P32

The sociology of work

The concept of work used in various

theories (e.g. functionalist theory) will be contrasted with, and examined within, a Marxist perspective. Modes of production, occupational mobility, recreation and leisure, satisfaction, women and minority groups are some of the areas to be covered. Local field trips will be encouraged.

Not open to students with credit in SOCI 311hc.

Lectures, seminar, 3 hours per week.

SOCI 2P33

Sociology of deviance

Theories of conforming and deviant social behavior and methodologies used in their investigation; problems of causal analysis in studies of deviance, conformity and over-conformity. Attention will be directed towards various forms of anti-social behavior, particularly those which are socially induced.

Not open to students with credit in SOCI 292hc.

Lectures, seminar, 3 hours per week.

SOCI 2P34

The labor process and trade unions (formerly SOCI 3P32)

An examination of 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.

Not open to students with credit in SOCI 3P32 or 351hc.

Lectures, seminar, 3 hours per week.

SOCI 2P41

Urbanism

The rise of cities, migration and urbanization; the ecology of city areas; the urban environment and social relations in cities; neighborhood perception, structure and interaction.

Not open to students with credit in SOCI 295hc.

Lectures, seminar, 3 hours per week.

SOCI 2P42

Community

Communities in rural, urban and suburban settings; the impact of industrialization and increased social scale on community structure and identity; community decision-making and the exercise of power.

Not open to students with credit in SOCI 371hc.

Lectures, seminar, 3 hours per week.

SOCI 2P43

Human ecology

The impact of the physical and cultural environment on the spatial and social structure of human aggregates.

Not open to students with credit in SOCI 372hc.

Lectures, seminar, 3 hours per week.

SOCI 2P51

Gender and society

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 non-traditional occupations, women in the military, gender and power.

Not open to students with credit in SOCI 346hc.

Lectures, seminar, 3 hours per week.

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.

Not open to students with credit in SOCI 266hc.

Lectures, seminar, 3 hours per week.

SOCI 2P53

Personality and role

The influence of culturally-determined socialization practices, role expecta-

tions and values upon the formation of personality; the self as a social process. Not open to students with credit in SOCI 267hc.

Lectures, seminar, 3 hours per week.

SOCI 2P55

Interpersonal communication
(also offered as COMM 2P55)

An examination of perspectives on human communication including both verbal and non-verbal communication.

Not open to students with credit in SOCI 247hc.

Lectures, lab, 3 hours per week.

SOCI 2P61

Introduction to criminology

The nature of criminal behavior, its social causes and consequences; organized crime; white-collar crime; forms of patterned evasion of legal norms; correctional institutions as social systems.

Not open to students with credit in SOCI 293hc.

Lectures, seminar, 3 hours per week.

SOCI 2P71

Class, status and power

An examination of classical and contemporary approaches to the study of social class. Topics may include forces and relations of production, the division of labor in society, class relations and class conflict, gender relations, social stratification, social mobility, the role of the state, and culturally-based differentiation (ethnicity, religion, language). Special attention will be given to the Canadian class structure through comparison with other industrialized nations.

Not open to students with credit in SOCI 216hc.

Lectures, seminar, 3 hours per week.

SOCI 2P72

Social inequality

An examination of classical and contemporary approaches to the study of social inequality. Topics to be discussed include the distinction between natural and social inequalities; political and social philosophies of equality and inequality; contrasting explanations for world inequality.

Special attention will be given to Canada and its location in the world economy.

Not open to students with credit in SOCI 217hc.

Lectures, seminar, 3 hours per week.

SOCI 2P73

Issues in development

A theoretical and empirical comparison of alternative explanations of underdevelopment in the Third World. The level of industrialization, urbanization, education and literacy; the distribution of wealth; the development of the nation-state and prospects for change or revolution in the Third World will be examined as the result of world investment and trading patterns.

Not open to students with credit in SOCI 352hc.

Lectures, seminar, 3 hours per week.

SOCI 2V80-2V89

Selected topics in sociology

Summer Day 1988: (2V81)

Women and development

A critical examination of the relationship between women and the development process which will explore what development means to women and what taking women into account means to development. Topics will include equity issues in the areas of health, education, work, appropriate technology, and general development planning, implementation, and evaluation.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: permission of the instructor.

Seminars, 3 hours per week.

SOCI 3F01

Modern social theory

An examination of major contemporary theories of society, such as structural functionalism, conflict, and symbolic interactionism. Consideration will be

Sociology

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.

Prerequisite: SOC 2F01(200).

Not open to students with credit in SOCI 220 or 300.

Lectures, seminar, 3 hours per week.

SOCI 3F10

Research design

An examination of research design with special emphasis on relating systematic theory to the development of research strategies.

Prerequisites: SOCI 2F10(230) and 3F01(300) or permission of the instructor.

Not open to students with credit in SOCI 390 or 391hc/395hc.

Seminars, 3 hours per week.

SOCI 3F21

The family

(also offered as CHST 3F21) (formerly SOCI(CHST) 3P21/3P51(290hc/294hc))

The study of 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.

Not open to students with credit in SOCI 3P21(290hc) or 3P51(294hc).

Lectures, seminar, 3 hours per week.

SOCI 3P26

Medical sociology

The investigation of social factors associated with physical health, illness and impairments; health care delivery systems and the factors which influence their utilization.

Not open to students with credit in SOCI 304hc.

Lectures, seminar, 3 hours per week.

SOCI 3P27

Psychiatric sociology

The investigation of social factors

associated with psychiatric illness. The course will emphasize the increased utilization of social science theory and research in the field of psychiatry.

Not open to students with credit in SOCI 303hc

Lectures, seminar, 3 hours per week.

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.

Not open to students with credit in SOCI 305hc.

Seminars, 3 hours per week.

SOCI 3P30

Sociology of women and work

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

Bureaucracy and complex organizations

An examination of the distinctive sociological theories of bureaucracy and complex organizations. Comparisons will be made between state-funded and profit-oriented organizations in North America, Japan and Western Europe. Attention will be paid to differences in managerial ideologies, authority and discipline, and the impact of informatics technologies on decision-making and communication.

Not open to students with credit in SOCI 345hc.

Lectures, seminar, 3 hours per week.

SOCI 3P33

Law and society

Comparative analysis of the forms and functions of law in society; influence of culture and social organization on law; the role of law in social change and the social sources of legal change.

Not open to students with credit in SOCI 318hc.

Lectures, seminar, 3 hours per week.

SOCI 3P34

Information technology and work

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 3P42

Canadian society

An analysis of special topics in Canadian studies. Although varying from year to year, topics may include multiculturalism and multilingualism in Canadian society, development and under-development, Canadian elites.

Not open to students with credit in SOCI 348hc.

Lectures, seminar, 3 hours per week.

SOCI 3P46

Native peoples and Canadian society

An examination of 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.

Not open to students with credit in SOCI 249hc.

Lectures, seminar, 3 hours per week.

SOCI 3P47

Ethnic groups

The nature of ethnic groupings in Canadian society; relationships among ethnic groups; intergroup hostility and

conflict; prejudice and discrimination; the position and role of these groups in the larger community.

Not open to students with credit in SOCI 349hc.

Lectures, seminar, 3 hours per week.

SOCI 3P52

Beliefs and values

Social analysis of belief systems as organized into ideologies; the interrelationship among ideological systems, emphasizing especially religious and political ideologies.

Not open to students with credit in SOCI 316hc.

Lectures, seminar, 3 hours per week.

SOCI 3P55

Interpersonal behavior

An investigation of the processes through which individuals relate to one another, primarily in two-person and three-person contexts.

Not open to students with credit in SOCI 366hc.

Lectures, seminar, 3 hours per week.

SOCI 3P56

Small groups

The study of 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.

Not open to students with credit in SOCI 367hc.

Lectures, seminar, 3 hours per week.

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. Prerequisite: SOCI 2P61(293hc) or permission of the instructor.

Not open to students with credit in SOCI 306hc.

Lectures, seminar, 3 hours per week.

SOCI 3P66

Social movements

This course can be 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. Not open to students with credit in SOCI 317hc.

Lectures, seminar, 3 hours per week.

SOCI 3P76

Technology and change

The analysis of the effects on socio-cultural systems of scientific and technological developments; technological innovation, both adaptive and maladaptive.

Not open to students with credit in SOCI 312hc.

Lectures, seminar, 3 hours per week.

SOCI 3V10-3V19

Selected research topics

Selected methodological issues in sociology.

SOCI 3V80-3V89

Selected topics in sociology

Selected issues in sociology.

Summer Day 1988: (3V81)

Women in cross-cultural perspective

A comparative analysis of women's experiences in varying societies and cultures with emphasis on how differing social, cultural, political, and economic factors affect women's roles, issues, and solidarity. Topics will

include the impact of sexism, racism, classism, and imperialism on women's conditions and women's status.

Lectures, seminar, 3 hours per week.

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.

Prerequisite: permission of the instructor.

Seminars, 3 hours per week.

SOCI 4F01

Honors seminar

The seminar will provide a forum for honors students to discuss their current research. The seminar's 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. Prerequisite: permission of the instructor.

Not open to students with credit in SOCI 490.

Seminars, 3 hours per week.

SOCI 4F10

Data analysis

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. May be taken concurrently with SOCI 3F10.

Not open to students with credit in SOCI 431.

Seminars, lab, 3 hours per week.

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. Prerequisites: SOCI 2F01(200),

Sociology

2F10(230), 3F01(300), 3F10(390); SOCI 4F01(490) required and may be taken concurrently; or permission of the chairperson.
Not open to students with 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(200), 2F10(230), 3F01(300); SOCI 3F10(390); SOCI 4F01(490) required and may be taken concurrently; or permission of the chairperson.
Not open to students with credit in SOCI 495.

SOCI 4P23

Research on popular culture

This research-oriented course will focus on topics that are 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, ideological analysis, semiological analysis, interviews, and nonparticipant observation of media and/or cultural personnel.

Prerequisite: SOCI 1F90(190) and 2P23(248hc), or permission of the instructor.
Not open to students with credit in SOCI 448hc.
Seminars, 3 hours per week.

SOCI 4P42

Special topics in Canadian society

An exploration of a substantive area in the study of Canadian society. The topics will cover Canadian communities, Quebec society, native peoples,

regionalism, ethnic groups and the intellectual traditions of Canadian political economies.

Not open to students with credit in SOCI 440hc.
Seminars, 3 hours per week.

SOCI 4P45

Comparative social analysis

Application of the comparative method of analysis to the study of similarities and differences between whole societies (modern and/or traditional), particular structures and processes of given societies (e.g., politics, family, law, organization of work), or between groups or regions of a single society.

Not open to students with credit in SOCI 420hc.
Seminars, 3 hours per week.

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.

Not open to students with credit in SOCI 315hc.
Seminars, 3 hours per week.

SOCI 4P54

Communication and general systems theory

(also offered as COMM 4P54)

An introduction to the application of basic general systems theory to communication. Beginning with general systems theory's assumptions and concepts, the course explores the interrelationships between general systems theory and communication. The unifying concepts of general systems theory are utilized to develop an integrated general theory of communications or semiotics, useful across diverse disciplines.

Prerequisite: permission of the instructor.

Not open to students with credit in SOCI 396hc.
Seminars, 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.
Seminars, 3 hours per week.

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.

Prerequisite: permission of the instructor.
Seminars, 3 hours per week.

Institute of Urban and Environmental Studies

Officers of Instruction

Director

F. Berkes
B. Krushelnicki
(after July 1, 1988)

Associate professors

F. Berkes
B. Krushelnicki

Assistant professor

J. Middleton

Professors emeriti

A.W.F. Banfield
R.C. Hoover

Co-operating faculty from the departments of Biological Sciences, Chemistry, Economics, Geography, Geological Sciences, Philosophy, Politics, and Sociology.

General information

Mackenzie Chown complex F202

The Institute of Urban and Environmental Studies offers combined major programs leading to BA and BSc degrees at the pass and honors levels in conjunction with seven collateral departments. It also offers a certificate program in urban and environmental studies and administers a BSc program in environmental science. A major in urban and environmental studies is always taken in conjunction with a major in a social science or science discipline.

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 urban and environmental issues, training in appropriate methods of investigation and analysis, and experience in developing creative solutions.

The approach is interdisciplinary and system-oriented, combining the principles and methods of the physical and social sciences. 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 Niagara peninsula, Ontario and Canada, and to the formulation of policy for change.

The curriculum in urban and environmental studies may be viewed as a pre-professional program. Graduates may proceed to graduate schools in urban and regional planning or in environmental studies.

Although urban and environmental studies are united into a single program, a student may elect to concentrate on either urban or environmental aspects in third and fourth year.

As an alternative, students who wish to pursue a pattern of studies which does not coincide with existing combined major programs, may follow a general or integrated studies program in urban and environmental studies specifically designed for their interests.

Co-operative studies

The Institute's co-operative studies program, organized in conjunction with public and private agencies outside the University, enables students to gain on-the-job practical experience for credit over a four or eight month period. Full time students who have completed year two of a combined major in urban and environmental studies are eligible for the program.

Environmental science program

See separate calendar entry under Environmental Science.

Certificate program

The program leading to a certificate in

Urban and Environmental Studies

urban and environmental studies provides an overview for interested persons who do not wish to proceed to a degree, and for those whose degree is in a different field. The admission requirements are the same as for the degree program.

The certificate is awarded on completion of six approved credits with an overall average of 70 per cent.

Required courses

UEST 2F96, 2F97; one year 3 credit in urban and environmental studies; one credit in mathematics and two credits in another department, chosen in consultation with the Institute adviser. (See "Electives" below.)

Combined major programs

The Institute participates in combined major programs with the following collateral departments: Biological Sciences, Chemistry, Economics, Geography, Geological Sciences, Politics and Sociology. The course requirements for these are described below.

Combined major programs involving other disciplines are also possible, and any student wishing to pursue one of these should consult the Institute director and the chairperson of the department in question.

The BA degree is granted if the majority of a student's courses is in the social sciences. The BSc degree is granted if the majority of a student's courses is in the sciences. For this purpose, the following Institute courses carry science credit: UEST 2F97, 3P41, 3P42, 3P51, 3P53, 3P55 and 3V10-3V15.

Pass Program

The normal program sequence, including the required courses in urban and environmental studies, is as follows:

Urban and Environmental Studies

Year 1

UEST 1F90; one credit from collateral department; mathematics credit (as specified by the collateral department; where none is specified, MATH 1P98 or equivalent is required, plus one half credit elective); two context credits.

Year 2

UEST 2F96 and 2F97; two credits in collateral department; one elective credit (chosen in consultation with the Institute and the collateral department; see "Electives" below).

Year 3

Two of UEST 3V10-3V15, 3V20-3V25 and 3V30-3V35; one other credit in urban and environmental studies at the year 3 level (excluding UEST 3V80-3V81); two credits in collateral department; one elective credit.

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 collateral department.

Years 1, 2 and 3

As in pass program

Year 4

UEST 4F90 (for students doing a thesis course in the collateral department, UEST 4F95 may be substituted for 4F90); two credits in collateral department; two elective credits (including COSC 1P90 or 1P91 if not previously taken). To qualify for an honors degree, student must complete a minimum of three credits numbered 3(alpha)90 or higher.

Course requirements for collateral departments

Biological Sciences

Pass

BIOL 1F90, 2F03; two of BIOL 2P90, 2P91, 2P93, 2P98; two year 3 biology credits; MATH 1P97/1P98.

Honors

As for pass degree, plus: two credits in biology, one of which must be at the year 4 level.

Chemistry

Pass

CHEM 1F85 or 1F93; 2F10, 2P20/2P21, 2P40 and one of CHEM 2P30 or 2P41; one of CHEM 3P20/3P21, 3P30/3P31; CHEM 3P40; PHYS 1F20 or 1F90; MATH 1P93/1P94.

Honors

As for pass degree, plus: two credits in chemistry at the year 3 or year 4 level, one of which must be at the year 4 level.

Economics

Pass

ECON 1P91/1P92, 2P21/2P22, 2P31/2P32; ECON 2P90 (Math 1P98 is its prerequisite); two year 3 economics credits; MATH 1P60/1P97.

Honors

Consult department.

Geography - BA

Pass

GEOG 1F90, (GEOG 1F91 is strongly recommended as a science context credit); GEOG 2P07/2P08 (or equivalent), two of GEOG 2P02, 2P03 and 2P06; GEOG 3P57, three year 3 half credits from Group A (see listing in Geography section of the calendar) excluding 2P90, 2P91 and 2P92.

Honors

As for pass degree, plus: GEOG 4F99; one year 4 credit in geography from group A; COSC 1P90 or 1P91 or equivalent. The courses selected cannot include both GEOG 4F90 and UEST 4F90.

Geography - BSc

Pass

GEOG 1F91, MATH 1P97/1P98; GEOG 2P07/2P08 (or equivalent), two

of GEOG 2P04, 2P05 and 2P09; GEOG 3P56; three year 3 half credits from group B (see listing in Geography section of the calendar).

Honors

As for pass degree, plus: GEOG 4F99; one year 4 credit in geography from group B; COSC 1P90 or 1P91 or equivalent. The courses selected cannot include both GEOG 4F90 and UEST 4F90.

Geology

Pass

GEOL 1F95, 2P31, 2P42, 3P31, 3P61; one of GEOL 3P24, 3P25; one of GEOL 2P01, 2P21; one credit in geology at the year 2 or year 3 level; CHEM 1F93 or 1F85, MATH 1P97/1P98.

Honors

As for pass degree, plus: two geology credits at the year 3 or year 4 level (one of which must be at the year 4 level); or GEOL 4F90 and one year 4 geology credit.

Politics

Pass

POLI 1F90 and four credits in politics at the year 2 level and above. These must include: POLI 2P01 (or 2F90) and 2P81.

Honors

As for pass degree, plus: two credits in politics which must include one of POLI 3P81, 4P80 and 4P81; and if POLI 2P01 was taken instead of 2F90, one of 3V00-3V09, 4P01, 4P02 and 4V00-4V09.

Sociology

Pass

SOCI 1F90, 2F01, 2F10, 3F01; one credit in sociology.

Honors

As for pass program, plus: SOCI 3F10 (preferably taken in year 3); SOCI 4F01 and one of SOCI 4F90, 4F91 or UEST 4F90.

Description of courses

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

Most Year 3 courses are offered in alternate years in a two-year cycle. With permission of the instructor, they are open to suitably qualified second year students. By planning their programs one year in advance, students would have a wider range of courses and combinations from which to choose.

UEST 1F90

Introduction to urban and environmental studies

An introduction to 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

Principles of planned urban change

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. Prerequisite: completion of year 1 requirements for urban and environmental studies or permission of the instructor.

Lectures, seminar, 3 hours per week

UEST 2F97

Principles of environmental studies
Introduction to basic ideas and concepts of environmental sciences.

Applied ecology, systems approach, the world futures debate on limits to growth. Major variables of the global ecosystem: population, food production, pollution and natural resources. Environmental economics and politics, with special consideration of energy issues and alternative energy policies.

Prerequisite: completion of year 1 requirements for urban and environmental studies or permission of the instructor.

Lectures, seminar, 3 hours per week; occasional field trips.

UEST 2V90-2V95

Special topics

A tutorial/seminar/special projects or directed readings course in an area of urban and environmental studies not represented by other courses.

Prerequisite: completion of year 1 requirements for urban and environmental studies and permission of the instructor.

Seminars, tutorial, 3 hours per week.

UEST 3P41

Marine resources

Introduction to oceanography and marine ecology, and the management of living resources of the sea. Ecological, economic and policy issues in coastal and oceanic fisheries and in aquaculture, with emphasis on Canadian examples. Effect of pollution and other stresses on marine resources. The enclosure of ocean resources: law of the sea.

Prerequisite: UEST 2F96(296) and 2F97(297) or permission of the instructor.

Lectures, seminar, 3 hours per week.

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 man in productive landscapes. Combin-

ing conservation with development. Effects of habitat fragmentation, genetic problems of small populations. The World Conservation Strategy, policies for governments and other organizations.

Prerequisite: UEST 2F96(296) and 2F97(297); MATH 1P98(198hc) or equivalent; or permission of the instructor.

Lectures, seminar, workshop, 3 hours per week.

UEST 3P51

Environmental microbiology

An introduction to environmental microbiology, emphasizing the role of micro-organisms in the polluted human environment. The course will deal with aspects of basic microbial processes within the context of waste treatment, toxicology, nutrient recycling and microbial interactions.

Prerequisite: BIOL 1F90(190) or UEST 2F97(297) or permission of the instructor.

Lectures, seminar, 3 hours per week.

UEST 3P52

Urban planning analysis

The theories, processes and methods of urban and regional planning will be presented and analyzed. Special attention will be directed to the Canadian situation, but examples from abroad may be included. Topics include: population projection; survey techniques; land/space allocation; environmental service theory and practice; land change process; use of computer mapping and statistical analysis; municipal taxation and budgeting.

Prerequisite: UEST 2F96(296) and 2F97(297); MATH 1P98(198hc) or equivalent (a half credit in computer science strongly recommended) or permission of the instructor.

Seminar, workshop, 3 hours per week.

UEST 3P53

Environmental impact assessment

The development of environmental impact assessment in Canada and in other countries; government regulations and legislation; methods of

Urban and Environmental Studies

environmental impact assessment; ecological, social, economic, and political aspects.

Prerequisite: UEST 2F96(296) and 2F97(297); MATH 1P98(198hc) or equivalent; or permission of the instructor.

Lectures, seminar, workshop, 3 hours per week.

UEST 3P55

Management of fisheries and wildlife resources

Introduction to management and conservation of fishery and wildlife resources with an emphasis on interdisciplinary aspects, current issues and policy questions in the management of living resources. Some training is provided in management tools and techniques. The course has largely Canadian content with case studies from the North, the Great Lakes area and the Atlantic and Pacific coasts. Prerequisites: UEST 2F96(296) and 2F97(297) or permission of the instructor.

Lectures, workshop, seminar, 3 hours per week.

This course will not be offered in 1988/89.

UEST 3P56

Urban countryside policy-planning

The urban-related countryside and its agricultural and environmentally sensitive resource areas. Policy problems of urban containment, boundary definition, density control and expansion in areas of high food-production potential and environmental sensitivity. Comparative approaches to countryside planning policies in other areas of heavy urban impact. Field observation and study assignments on urban countryside policies.

Prerequisite: UEST 2F96(296) and 2F97(297) or permission of instructor.

Lectures, seminar, 3 hours per week.

UEST 3P57

Social services planning in the urban region

Community objectives for quality of life through social services. Constitu-

tional 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.

Prerequisite: UEST 2F96(296) and 2F97(297) or permission of instructor.

Lectures, seminar, workshop, 3 hours per week.

UEST 3V10-3V15

Interdisciplinary perspectives on pollution

Mainly a science-oriented course, dealing with sources, effects and eventual fate of different types of pollutants; their metabolic and other biological effects, chemical transformations, dispersal and geological deposition; selected case studies of air and water pollution with emphasis on the interaction of relevant disciplines; scientific knowledge and the formulation of regulations to control pollution. Prerequisite: UEST 2F96(296), 2F97(297) or permission of the instructor.

Not open to students with credit in UEST 393hc.

Lectures, seminar, 3 hours per week.

UEST 3V20-3V25

Interdisciplinary perspectives on the quality of life

The process of value formation as the core of the concept of life quality. Development of human potential. The disciplinary and interdisciplinary perceptions required to elucidate the quality of life concept and promote its application through public policy. Special attention given to the interaction between the humanities and social and natural sciences.

Prerequisite: UEST 2F96(296) and 2F97(297) or permission of the instructor.

Lectures, seminar, workshop, 3 hours per week.

This course will not be offered in 1988/89.

UEST 3V30-3V35

Interdisciplinary perspectives in urban and environmental studies

Specific topics to be selected annually at the discretion of the director in consultation with co-operating faculty. 1988/89 (3V30): **Environmental ethics.**

Prerequisite: UEST 2F96(296) and 2F97(297) or permission of the instructor.

Not open to students with credit in UEST 397 in 1985-87.

Lectures, seminar, workshop, 3 hours per week.

UEST 3V60-3V65

Selected issues in urban policy

An examination of specific issues of urban policy in Canada. These areas may vary from year to year. Topics which may be included are: Canadian housing policy; urban/environmental water resource planning; energy policy; special problems of planning for small towns and modestly populated regions; transportation policy.

Prerequisites: permission of the instructor (UEST 2F96(296), 2F97(297), 3P52(352hc) are a desirable combination).

Lectures, seminar, 3 hours per week.

This course will not be offered in 1988/89.

UEST 3V80-3V81

Co-operative education

A program of practical experience in the career opportunities available to students of urban and environmental studies. Students will be placed in offices and laboratories of government ministries and agencies as well as with private industries as full time employees for a period of four months in order to learn the practical applications of their university knowledge. Students will receive continuing supervision and support from the course supervisor and must submit a final report for assessment. The course may commence in either May, September or January of each year.

Prerequisite: third or fourth year standing in urban and environmental studies co-major.

Eligibility will also be determined by academic standing.
May be repeated once.

UEST 4F90

Honors research project

Each student will undertake a research project under faculty supervision, with a schedule including tutorials and regular class meetings held throughout the year. An oral defence of the project report will be required.

Prerequisite: completion of year 3 as a combined major in urban and environmental studies, or permission of the instructor.

Seminar, tutorial, 3 hours per week.

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.

Prerequisite: completion of year 3 as a combined major in urban and environmental studies, or permission of the instructor.

Seminars, 3 hours per week.

Electives in urban and environmental studies programs

After consultation with the urban and environmental studies adviser and the collateral department, the following courses should be included, where possible, as electives. (Normally, students should take such courses in one or more departments outside their collateral major.) In planning their programs, students should be certain to fulfill necessary prerequisites for such courses. The list of courses here is a minimal one. It includes only those courses which are most directly relevant to urban and environmental studies. Other more advanced courses may be open to particular students and there may be other introductory courses which are relevant to the urban or environmental area. Such courses may be accepted in urban and environmental studies programs with the

permission of the chairperson of the department of a student's collateral major and the director of the Institute.

Environmentally-related courses

BIOL 1F25

Biology, man and environment

BIOL 2F03

Principles of environmental biology

BIOL 3P65

Investigative studies in animal ecology

BIOL 3P71

Ontario universities field biology course

BIOL 3P72

Ontario universities field ecology course

GEOG 1F91

Principles of physical geography

GEOG 2P94

Environmental problems in the Third World

GEOG 3P22

Principles of geomorphology

GEOG 3P23

Advanced and applied geomorphology

GEOG 3P24

Glacial geomorphology/geology

GEOG 3P30

Plant geography

GEOG 3P31

Soil science

GEOG 3P82

Geography of recreational resources

GEOG 3P83

Geography of water resources

PHIL 1F91

Philosophy and social issues

POLI 3P66

Environmental policy, law and administration

SCIE 1F20

Science, its growth and consequences (offered by Chemistry)

Urban-related courses

CANA 2F91

Canadian culture and society: interdisciplinary studies

CLAS 4P10

The city in the ancient world

ECON 3P18

Urban economics

ECON 3P19

Regional economics

GEOG 1F90

Introduction to human geography

GEOG 2P03

Principles of urban geography

GEOG 3P40

The urban system

GEOG 3P41

Urban form and structure

GEOG 3P42

The evolution of urban space: the European city

GEOG 3P43

The evolution of urban space: the Canadian city

GEOG 3P44

Urban social geography

POLI 3P11

Urban politics and administration

POLI 4P11

Issues in local government and politics

SOCI 2P41

Urbanism

SOCI 2P42

Community

SOCI 2P43

Human ecology

SOCI 3P76

Technology and change

Scholarships, awards and financial assistance

Medallists

Spring Convocation 1987

Governor-General's Medal:

J.C. Bourgeau, North Bay

Vice Chancellor's Medals:

S.C. Booth, St. Catharines

P. Menon, Fonthill

A.C. Plint, Pelham

Fall Convocation 1987

Vice-Chancellor's Medal:

M. Andrighetti, Welland

Deans' Honors Lists and In-course Scholarship winners 1987/88

Administrative Studies

M. Andrighetti, Welland
R.A. Bodde, St. Catharines
R.P. DePetris, St. Catharines
P.A. Durnford, Fonthill
J.A. Ealaschuk, Port Colborne
T. Gatzemeier, St. Catharines
B.W. Geddes, Nepean
S.L. Higgins, Jarvis
C.M. Ho Tom, St. Catharines
P.L. Ingram, St. Catharines
D. Ioannoni, Welland
E.L. Kerry, St. Catharines
K.J. Klassen, St. Catharines
M. Marotta, Welland
K.L. McEown, Simcoe
K.M. McQueen, Collingwood
J.M. Moore, Ottawa
D.M. Newton, Pefferlaw
P.M. Munn, St. Catharines
B.T. Richards, Barrie
D.W. Rye, St. Catharines
D.A. Sevenpier, Wainfleet

M.A. Smith, St. Catharines
R. Tirpak, St. Catharines
T.K. Tunstall, Newmarket
J.H. Vangameren, St. Catharines
E.P. Vanwheelie, Amherstview
A.K. Walker, New Liskeard
J.R. Wright, Thunder Bay

Humanities

J.C. Aveline, Smithville
P.J. Barkwell, Thorold
P.D. Boadway, Vineland
E. Bueckert, St. Catharines
L. Chambers, Niagara Falls
G.R. Dixon, Calgary
R.E. Gilmore, Niagara Falls
V. Heidolph, Thorold
P.A. Hobbs, Fort Erie
T.S. Houser, St. Catharines
J.D. Krikorian, St. Catharines
A.C. Kroh, St. Catharines
E. Loewen, St. Catharines
A. J. McBay, Welland
W. R. McBride, St. Catharines
H. Mlodzianowska, St. Catharines
L.A. Morkunas, Hamilton
K.T. Morris, St. Catharines
R.J. Murray, Cayman Islands
C.L. Peters, St. Catharines
R.E. Quinn, Niagara Falls
S.A. Switzer, Oakwood
U.J. Tuerk, Hamilton
D.L. Vannijnatten, Binbrook
J. Wilkinson, St. Catharines

Mathematics and Science

P.J. Anson, St. Catharines
P.N. Arberg, Burlington
P.M. Argenta, Niagara Falls
M.M. Ballyk, St. Catharines
B.C. Bertosa, St. Catharines
B.W. Bongard, Terra Cotta
A.L.L. East, St. Catharines
A. Elezzabi, Libya
R.M. Fast, St. Catharines
B.M. Fox, Tilbury
K.J.G. Grant, Niagara Falls
C.M. Headon, Mississauga
J.H. Martin, Welland
R.C. McLean, St. Catharines
J. Mey, St. Catharines
J.L. Senske, St. Catharines
W.A. Snedden, St. Catharines
P.O.S. Tam, St. Catharines
G.A. Wichert, Virgil

Physical Education and Recreation

K.L. Brown, St. Catharines
J.I. Toward, St. Catharines
M.L.L. Van Kessel, Simcoe

Social Sciences

C.A. Balcom, St. Catharines
M.J. Bergin, Loretto
L.A. Budgell, Sarnia
T.M. Casarella, St. Catharines
W.S.G. Choy, Kowloon
C.C. Conroy, Sudbury
D.M. DePetris, St. Catharines
S.E. Demeter, Hamilton
D.A. Dempsey, Tillsonburg
D.L. Ellwood, Sarnia
G.L. Ertzinger, St. Catharines
S.E. French, Hamilton
C.L. Frommhold, St. Catharines
G.D. Gardin, Amherstburg
J.S. Giancarlo, Fonthill
D.M. Goetz, Rottenham
J.H. Grant, Dobbinston
M.L. Heimpel, St. Catharines
R. Hock, St. Catharines
R.D. Holby, St. Catharines
S.C. Hrycay, Dryden
M. Imort, West Germany
C.M. Jones, St. Catharines
M. Joris, Oakville
L.L. Kirby, Wawa
S.D. Leslie, Fonthill
S.E. Levy, Burlington
D.J. Long, Niagara Falls
L.J. Main, Wainfleet
C.A. McCready, St. Catharines
F. Merz, West Germany
J. Mestek, St. Catharines
V. Mimms, Niagara Falls
I. Nespeca, Niagara Falls
K.S. Ng, Malaysia
J.M. O'Brien, St. Catharines
G.L.R. Ovenden, Oshawa
A.S. Pettes, St. Catharines
S.E. Polley, Oakville
M.A. Rice, Thornbury
S. Runions, Hamilton
D.M. Rutledge, Ripley
C. Scheitor, St. Catharines
S.E. Sendrowski, Welland
M.N. Shave, Penetanguishene
K.C. Silver, St. Catharines
S.L. Spencer, Toronto
E.M. Szeman, Fonthill
R. Thachuk, Tecumseh
L.M. Torbicki, Port Colborne
M.J. Utvich-Spear, Fort Erie
S.M. Walker, Essex
T.V.P. Wang, St. Catharines

K.L. Watson, Hannon
 P.L. White, Paisley
 N.I. Wigchert, Sarnia
 C.A. Williams, St. Marys
 G.H. Yates, St. Catharines

**Donor scholarship winners
 1987-1988**

Alumni Association Scholars

K.L. Armstrong-Roloson, Niagara Falls
 T.J. Boldt, St. Catharines
 R.A. Bonato, Niagara Falls
 C.L. Glenney, St. Catharines
 W.A. Hessin, St. Catharines
 B.G. Irwin, St. Catharines
 A.M.V. Johnson, Niagara Falls
 W.R. Leffler, Campden
 P.J. Penner, Campden
 S.P.M. Sim, St. Catharines
 S.L. Swayze, Fonthill
 P.M. Wloch, St. Catharines

Lily Bell Memorial Scholar
 L.D. Ranger, Welland

J.P. Bickell Foundation Scholar
 C.T. Kimmerly, Niagara Falls

**Birks Family Foundation
 Scholar**
 E.M. Szeman, Fonthill

Faculty Board Scholars
 K.L. Brown, St. Catharines
 T.M. Casarella, Niagara-on-the-Lake
 S.J. Fitzhenry, St. Catharines
 C.L. Peters, St. Catharines

Sophia Gampel Memorial Scholars
 L. Chambers, Niagara Falls
 P.M. Argenta, Niagara Falls

George Head Memorial Scholar
 P.M. Munn, St. Catharines

Aileen Hood Memorial Scholar
 B.D. Zander, Vernon

Lubrizol of Canada Scholars
 P.N. Arberg, Burlington
 N.M. Elmiladi, St. Catharines

P.M. Magruder Memorial Scholar
 R.M. Fast, St. Catharines

Gertrude Millward Scholar
 M. Boeringer-Gemrich, Niagara-on-
 the-Lake

**Molson - CHSC - Folk Arts Council
 Scholar**
 K.M. Csoli, St. Catharines

Trevor Morgan Music Scholar
 J.P. Wells, Vineland

Ontario Paper Company Scholars
 M. Montesi, Niagara Falls
 P.M. Munn, St. Catharines
 M.K. Seifreid, St. Catharines
 J. Sciortino, Fort Erie

**Partridge, Skene & Company
 Scholar**
 R.P. DePetris, St. Catharines

Rose, Horne & Stevenson Scholar
 C.A. McCready, St. Catharines

Lillie Traver Scholar
 W.R. McBride, St. Catharines

Spencer Williams Scholar
 R.D. Holtby, St. Catharines

Willmot Foundation Scholar
 P.L. Ingram, St. Catharines

Wood Gundy Scholar
 R.C. McLean, St. Catharines

Xerox Canada Inc. Scholar
 P.A. Dumford, Fonthill

Brock Entrance Scholars

C. Boyd Slemon Scholarship
 J. Sciortino, Fort Erie

C. Bruce Hill Scholarship
 N.C. Kushner, St. Catharines

Dr. G.C. Shaver Scholarship
 J.M. McQuiggan, St. Catharines

W.L. Adams, Chatham
 A.S. Allard, Gloucester
 J.E. Arthur, Otterville

G.M. Asselin, St. Catharines
 S. Bandy, Brampton
 C.A. Beam, Niagara Falls
 S.E. Bell, Paris
 M.L. Bennett, St. Catharines
 S. Bonbled, Burlington
 G.J. Borsuk, Brantford
 M.J. Boulanger, Sault Ste. Marie
 J.F. Boyle, St. Catharines
 V.S. Bronn, Fonthill
 J. Brown, Welland
 S.L. Callahan, St. Catharines
 M.S. Campbell, Ruthven
 C.A. Capredoni, St. Catharines
 J.P. Cass, Brantford
 M. Cassim, Rexdale
 V. Cecco, Thorold
 A.M. Cervo, Sault Ste. Marie
 L.C.M. Cheshire, Sherkston
 J. Ciocca, St. Catharines
 L.A.C. Clanfield, Dundas
 C.M. Colman, Putnam
 J.L. Corner, Welland
 P.J. Cornies, St. Catharines
 H.M. Cowey, Peterborough
 K.M. Csoli, St. Catharines
 J.E. D'Amico, St. Catharines
 D.C. Dalke, St. Catharines
 M.T. Dalla Pozza, Woodstock
 P. Darosa, Mississauga
 C.A. Davis, Bognor
 S.J. Davis, Burlington
 J.E. DeGroot, Tillsonburg
 J.A. Del Gobbo, Thorold
 M.P. Di Franco, St. Catharines
 L.C. Dommasch, Niagara Falls
 M.L. Donaldson, Burlington
 K.L. Dottori, Thorold
 A.M.L. Drysdale, Erin
 J.A. Dunford, Balmertown
 S.M. Durksen, St. Catharines
 C.A. Dywan, Grimsby
 E.M. Eastwood, Aylmer
 S.K. Eaton, St. Catharines
 J. Elias, Harrow
 S.M. Fahrer, Hanover
 M. Fazio, Niagara Falls
 H.W. Fieguth, Niagara-on-the-Lake
 J.E. Fray, Owen Sound
 R.J. Frey, Cambridge
 K.M. Friesen, Jordan
 P.E. Fuderer, St. Catharines
 A.M. Gerkema, Orillia
 V.J. Gill, Toronto

Scholarships and awards

J.A. Goss, Welland
M.A. Gossen, St. Catharines
T.A.M. Graham, St. Catharines
G. Greco, St. Catharines
T.M. Gropp, Milverton
F.D. Gualtieri, Thorold
R. Hagemans, Streetsville
B. Harris, St. Catharines
A.M. Hartle, Thorold
A.R. Hayne, Wainfleet
T.A. Helesic, Brampton
P.C. Herget, Kanata
K.L. Hodgins, Kingsville
C.H. Hopson, South Porcupine
J.L. Houghton, Gloucester
J.D. Howell, Belleville
A. Jakobs, Dundalk
L.E. Janes, Sarnia
B. Jarrett, Cambridge
A.M. Jonkers, Indian River
D.M. Kielbasa, Hamilton
J. Kingdon, Ridgeway
S.L. Kingsley, Hamilton
J.A. Kittl, St. Catharines
E.M. Klassen, Niagara-on-the-Lake
V.L. Knowles, Brantford
R.C. Konkel, St. Catharines
K.A. Korinek, Vineland
K.A. Kromkamp, Sherkston
H.L. Lafferty, St. Catharines
D.B. Langendoen, St. Catharines
J. Lapko, Niagara Falls
B.M. Lee, Renfrew
L.L. Lembke, Ayton
T.L. Levay, Fonthill
J.A. Lever, St. Catharines
K.A.J. Lloyd, Woodstock
E.A. MacLeod, Dalkeith
S.L. MacRae, Stoney Creek
A.T. Marcinow, Stoney Creek
J.E. Marten, St. Catharines
J.M. Mason, Niagara Falls
T.L. Mason, St. Catharines
T.A. McBrayne, Welland
J.W. McDonald, Ottawa
M.S. McKay, St. Catharines
J.C. McNeil, Welland
L.A. Mitterling, Niagara Falls
S.D. Moore, Whitby
M.R. Muller, St. Catharines
C.J. Mullin, Fonthill
K.K. Murdock, Niagara-on-the-Lake
T.M. Noronha, St. Catharines
D.K. O'Neill, St. Catharines
S.M. Oleksuik, Scarborough
E.M. Olsen, St. Catharines
S.L. Pakulis, Paris
D.A. Penner, St. Catharines
M.A. Perrie, Brussels
S.E. Powell, Paris
T.A. Pring, Caledonia
M.E. Reimer, St. Catharines
M.P. Ripley, Lynden
T.M. Robinson, St. Catharines
N.L. Rosmarin, St. Catharines
F.J. Ross, Brantford
P.A. Sallafranque, Niagara-on-the-Lake
D. Sawatsky, St. Catharines
M.V. Scalzi, Thorold
T.A. Scarfone, Sault Ste. Marie
M.J. Sedore, Newmarket
D. Shannon, St. Catharines
J.N. Sherrett, St. Catharines
S.R. Sinclair, Whitefish
C.A. Sitzler, Mount Pleasant
J.C. Snejdar, St. Catharines
M.A. Spry, Whitby
W.R. Steinburg, Ridgeville
S.M. Stewardson, Waterford
T.B. Taylor, St. Catharines
J.M. Terrill, Markham
R.J. Thomblison, Burlington
S.L. Thrower, Wooler
J.N. Toor, Oakville
T.L. Tuer, Stratford
D.J. Turcotte, Niagara Falls
S. Vandenbelt, Lambeth
T.A. Visinski, Renfrew
S.J. Vowles, Stoney Creek
R. Ward, Rexdale
K.L. Waskan, Wainfleet
L. Wenham, Georgetown
T.D. Whaley, Fonthill
S.S. Whitesell, Tillsonburg
M.M. Whittaker, Grimsby
K.A. Wilson, Owen Sound
A.C. Winter, Niagara-on-the-Lake
S.D. Wiseman, Niagara Falls
L.M. Wolfgram, Stratford
A. Yahaya-Luddin, Kingston
P. Yarich, Niagara Falls
R.J. Young, St. Catharines
J.A. Zezela, Welland

Medals

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 medal is presented at Spring Convocation to a graduating student from that Convocation or the previous Fall Convocation in recognition of outstanding scholastic and personal achievement.

Vice Chancellor's Medals are presented at each Convocation to students whose consistent work at a superior level warrants recognition.

Scholarships

Students need not apply for scholarships; the academic records of all full time students are regularly reviewed to assess and compare their qualifications for scholarships. 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. Awards will be credited to the student in two equal parts, in November and on January 31. A student who withdraws from the University will not receive a refund for that part of tuition fees paid out of scholarship monies.

Entrance scholarships

Entrance scholarships are administered by the Senate of Brock University. All applicants who enter into full time university study directly from Ontario Grade XIII are automatically considered for entrance scholarships. Subject to the availability of funds, consideration will be given to other Canadian applicants.

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

Awarded to an incoming first year student from a Niagara region high school with the highest average:

The Ontario Paper Company Limited Scholarship

Awarded to incoming first year students with high academic standing:

Brock University Founders' Scholarships
Brock University Admission Scholarships

In-course scholarships

Brock In-course scholarships are administered by the Senate of Brock University. To be considered for Brock In-course Scholarships and a number of donor scholarships, full time students must have completed five credits or more in the previous Fall/Winter session with a minimum overall

average of 80 per cent. The minimum average required for the award of an in-course or donor scholarship is determined each year by the Senate Committee on Awards and Bursaries.

Alumni Scholarships

Value: to be determined. 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: University Women's Club of St. Catharines
 Established: 1974

J.P. Bickell Foundation Scholarship

Value: \$3000. 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 per cent or better at the end of his or her first year, and must maintain this average throughout the subsequent years of the course or relinquish the scholarship.
 Donor: J.P. Bickell Foundation
 Established: 1968

Birks Family Foundation Scholarship

Value: to be determined. To be awarded to outstanding students at the discretion of Senate.
 Donor: Birks Family Foundation
 Established: 1968

Cyanamid of Canada Scholarship

Value: \$775. To be awarded to a student of high scholastic standing in science or mathematics.
 Donor: Cyanamid of Canada Limited
 Established: 1967

Raffaele DeLuca Memorial Scholarship

Value: to be determined. 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

Joseph Dennis Scholarship in Italian

Value: \$300. 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

Faculty Board Scholarships

Value: to be determined. Eligible candidates will be full time students returning to Brock for the fourth year. There will be one award for each of the three divisions, for the School of Administrative Studies, and for the School of Physical Education and Recreation.
 Established: 1986

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: to be determined. To be divided between two eligible students from the city of Niagara Falls, Ontario.
 Donor: Mr. Abraham Gampel, Niagara Falls, Ontario
 Established: 1970

George Head Memorial Scholarship

Value: \$200. To a student majoring in administration who demonstrates superior ability.
 Donor: Purchasing Management Association of Canada
 Established: 1973

Club Heidelberg Scholarship

Value: \$200. To be awarded to the top

Scholarships and awards

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 Social Club
Established: 1965

Aileen Hood Memorial Scholarship

Value: to be determined. To be awarded to a student of superior ability entering fourth year and majoring in physical education.
Donor: Aileen Hood Estate
Established: 1982

H. H. Knoll Memorial Scholarships

Value: to be determined. To be awarded to students of honors standing, who are graduates of secondary schools in the Niagara Region, and who are taking an undergraduate degree program.

Donor: The family of H. H. Knoll
Established: 1987

Lubrizol of Canada Scholarship

Value: to be determined. 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

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

Gertrude Millward Scholarship

Value: \$200 annually. To be awarded to a student in the division of humanities for outstanding performance.

Donor: Earl Mountbatten Chapter, IODE
Established: 1977

Molson - CHSC - Folk Arts Council Scholarship

Value: To be determined. To be awarded to a student(s) entering university from a St. Catharines high school.

Trevor Morgan Music Scholarship

Value: \$250. To be awarded to the student with the highest standing in music entering second year as a major or combined major in music.

Donor: Trevor Morgan
Established: 1973

Senior Scholarship in Music I

Value: to be determined. 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 to be determined. 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

Niagara District Chartered Accountants Association Prize

Value: \$500. To be awarded to the graduating student in the Accounting Co-op program with the highest overall average. The successful candidate must have completed his/her work terms with a Chartered Accountant firm.

Donor: Niagara District Chartered Accountants Association
Established: 1987

Ontario Paper Company 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 taking an undergraduate degree program.

Donor: The Ontario Paper Company Limited
Established: 1967

Partridge, Skene & Company Scholarship

Value: \$250. To be awarded to a full-time student enrolled in the 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, Skene & Company, Chartered Accountants.
Established: 1971

Club Rheingold of Welland Scholarships

Value: \$300. To be awarded to 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

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: to be determined. To be awarded to a student of honors standing majoring in chemistry.

Donor: Scholler Foundation
Established: 1973

Gordon V. Thompson Scholarship in Music

Value: \$100. To be awarded to the student with the highest average marks in music courses in the first year of a single or combined major in music.

Donor: Gordon V. Thompson
Established: 1973

Lillie A. Traver Scholarship

Value: to be determined. To be awarded to a student of honors standing majoring in history.

Donor: Miss Lillie A. Traver
Established: 1976

The Spencer Williams Scholarship

Value: to be determined. To be awarded to an outstanding student in

the school of physical education.
Donor: The Rotary Club of
St. Catharines South
Established: 1973

Willmot Scholarship in Administration

Value: \$500. To be awarded annually to an outstanding student majoring in administration.
Donor: D.G. Willmot
Established: 1972

Wood Gundy Scholarship

Value: to be determined. To be awarded to students of superior ability.
Donor: Wood Gundy Securities Limited
Established: 1970

Xerox Canada Inc. Fellowship

Value: \$1000. To be awarded to a student of high scholastic standing in a BA program in the general area of business administration.
Donor: Xerox Canada Inc.
Established: 1983

Prizes

Departmental prizes are awarded for excellence in a particular area of study. No application is required; selection and award is made by the department.

Administrative Studies

John Edds Prize in Accounting

To be awarded to the graduating student in the School of Administrative Studies with the highest average in accounting courses prescribed for accounting majors.
Donor: J.A. Edds
Established: 1986

Administrative Studies Book Prize

A book prize awarded to a student or students of outstanding academic achievement in Year 4 of administrative studies program.

Maurice Perkins Medal

To be awarded to the graduating

student in the School of Administrative Studies with the highest academic standing, in accordance with the standards used in awarding their faculty medal.

Donor: Dr. Maurice F. Perkins

Biological Sciences

Biology Faculty Book Prizes

Book prizes are given annually to the student achieving the highest grade in Biology 190, 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

Chemistry Alumni/Faculty Book Prizes

A series of book prizes shall be awarded each autumn to second year chemistry majors. Book prizes are also awarded each autumn to third year chemistry majors and combined majors with outstanding achievement.

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 per cent 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

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

Scholarships and awards

second year computer science programs.

English

English Department Book Prize

A book prize to a student or students of 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 himself. 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 English 191 or 199. Any entry must be submitted to the competition by the student himself. Donor: Department of English. Established: 1981-82

Fine Arts

M.E. and L.E. Miller Prize in Film and Visual Arts

For excellence over three or four years standing in film or visual arts courses. Established: 1971

Music Division Prize, Fine Arts

To be awarded to a student showing all-round excellence in both theoretical and practical music in any year of a single or combined major in music.

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 Fine Arts
For excellence as an honors student in one or more streams of the Fine Arts department.

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 Fine Arts.

J.H. and J.F. Harding Prize in Theatre and Dramatic Literature

For excellence over three or four years standing in dramatic literature courses. Established: 1972

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 the French and German languages. 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 III Book Prize

To be awarded to a Year III 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.

Geological Sciences

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

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 Division.

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.

Germanic and Slavic Studies**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

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

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

Department of History Book Prizes

Four book prizes, to be awarded to outstanding students of history in each of year 1 through 4.

Mathematics**John and Rosslyn Reed Prizes**

For students who show outstanding proficiency in mathematics.

Established: 1968

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

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 Department Book Prize**

A book prize to one or more students of outstanding academic achievement in physics in any year.

Politics**Politics Book Prizes**

Three book prizes to be awarded to the best students entering second, third and fourth year politics programs.

Established: 1966

Psychology**Psychology Book Prizes**

Prizes are awarded to the best graduating students in each of the third and fourth year psychology programs.

There is also a prize to be awarded to the best student in PSYC 3F40.

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**Environmental Studies Award**

Value: to be determined. To be awarded to a third or fourth year student in environmental studies.

Donor: Anonymous

Established: 1977

Urban Studies Award

Value: to be determined. To be awarded to a third or fourth year student in urban studies.

Donor: Anonymous

Established: 1977

Other Awards**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

Edith 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: Prof. J. P. Meeker

Established: 1971

Schaeffe Hall Award

To be awarded to an upper-year Residence student of high academic standing who has made a worthy contribution to residence life.

Donors: Residents of Schaeffe, Hall, 1985/86.

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

Scholarships and awards

Registrar.

Donors: The family and friends of
Barrie-Ann Bergsma.
Established: 1987

Bursaries and other financial assistance

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. 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

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.

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 Student Awards office. Recipients will be selected by the Senate Bursary Subcommittee.
Established: 1980

The Dr. John H. Belton Bursary

Value: \$500. To be awarded to a mature female 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

J.P. Bickell Foundation Bursary

Value: \$1500. For distribution to students in great need.
Donor: The J.P. Bickell Foundation

Established: 1969

Birks Family Foundation Bursary

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.

William J. Edgar Bursary

Value: \$900. Awarded annually to needy students from the former county of Welland.
Donor: Jenny Bell Edgar Estate
Established: 1966

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

IODE Bursary

To be given to needy students who may find it extremely difficult to continue their year without additional outside aid.

Inter-Provincial Pipe Line Bursary

Value: \$1000. Awarded annually to students holding Canadian citizenship or permanent resident status who can demonstrate great need. At least 50 per cent of the awards to be made to students in the sciences.
Donor: The Inter-Provincial 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

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.
Established: 1979

Evelyn Kita Bursary

Value: \$250. Awarded to students in great need.
Donor: Mrs. Evelyn Kita
Established: 1972

Ted Lancaster Bursary

Value: \$1000. To be awarded to a student 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 per cent or better.)
 Donor: friends of the late Professor
 Established: 1982

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 extra-curricular activities.
 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

Ontario Credit Union Charitable Foundation Bursary

Value: \$250. To be awarded to a Canadian citizen or permanent resident in the second, third, or fourth year of a business management course.
 Donor: Ontario Credit Union Charitable Foundation.
 Established: 1985

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 Awards 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

University Women's Club of St. Catharines Bursary

Value: to be determined. To provide assistance to female students in financial need.
 Donor: University Women's Club of St. Catharines
 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: University Women's Club of St. Catharines
 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

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 per cent or better in his or her most recent year of study. Available annually.

Scholarships and awards

Donors: friends of the late Professor.
Established: 1981

Rosalind (Hyman) Blauer Award

To be awarded annually to an outstanding member of the Brock community (students, staff or faculty) engaged in work directed at ameliorating the position of women in contemporary society. This award is by application or nomination to the Administrative Committee for the Rosalind Blauer Memorial Fund. Forms are available from the Student Awards office. The award is in honor of the memory of Prof. Rosalind (Hyman) Blauer, founding member of the Brock department of Economics.

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

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 extra-curricular 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

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 per cent 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.

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.

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 eligible. 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 Student Awards 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 per cent 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

Masonic Foundation of Ontario Bursaries

The foundation provides assistance for students near graduation who otherwise could not complete their year owing to sudden personal emergencies.

Donor: Masonic Foundation of Ontario
Established: 1967

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

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

United 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

To prospective donors

The University welcomes offers of funds for scholarships, bursaries and prizes from individuals, companies and associations.

Enquiries should be addressed to:
Director of Development
Brock University
St. Catharines, Ontario
L2S 3A1
(416) 688-5550 ext. 3591

Ontario Student Assistance Program

These are the components of the Ontario Student Assistance Program (OSAP):

Ontario Study Grant Plan

The main purpose of the Ontario Study Grant Plan is to provide non-repayable grant assistance to students from less affluent families, normally for their first four years of post-secondary education.

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 per cent of a normal course load, and some full-time students whose needs are not fully met by the Canada Student Loans Plan.

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 full credit courses or their equivalent); students will not be able to receive financial assistance from both this program and the Ontario Study Grant Plan 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 Study Grant Plan, 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 Student Awards office directly to arrange a personal interview.

Application forms and brochures for the 1988/89 program will be available in April, 1988, and may be obtained from:

Student Awards office
Thistle south, room 260
Brock University
St. Catharines, Ontario
L2S 3A1

Reporting awards

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.

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professor of Biological Sciences
- M.J. Cardy, MA, BLitt (Oxford)
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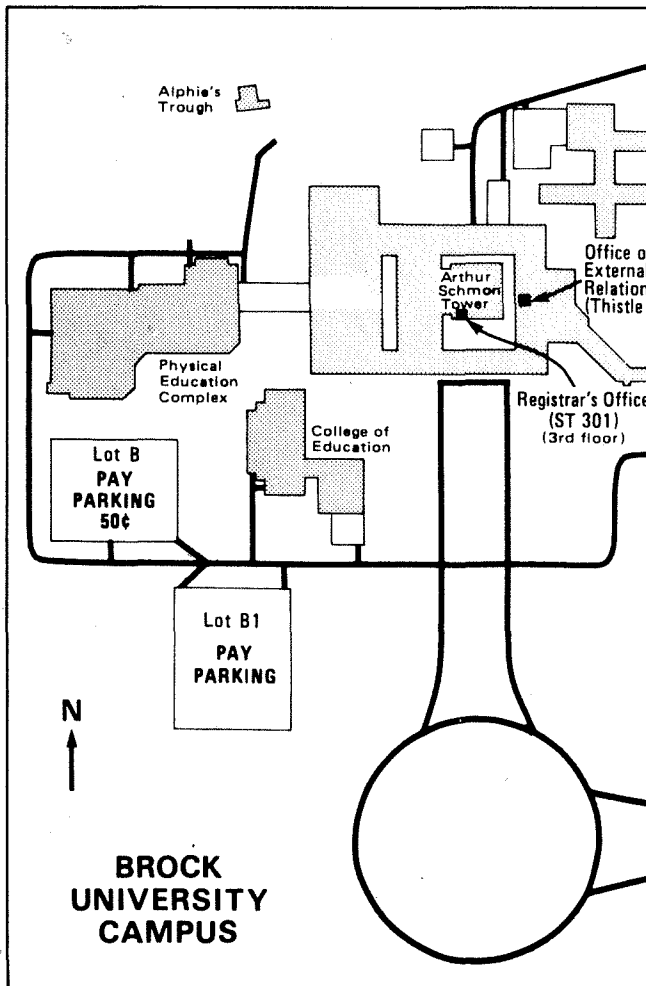
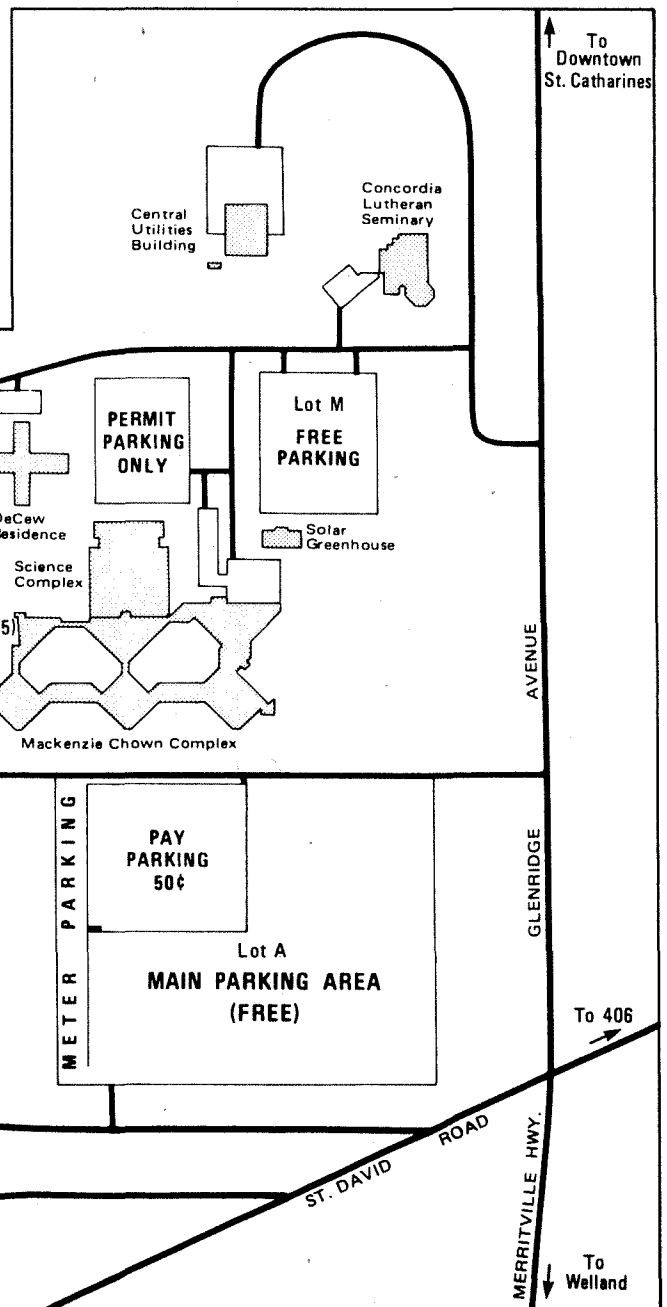
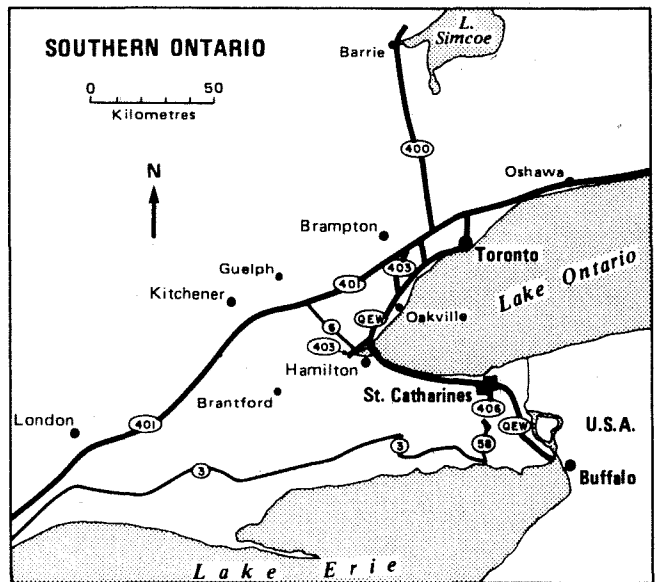
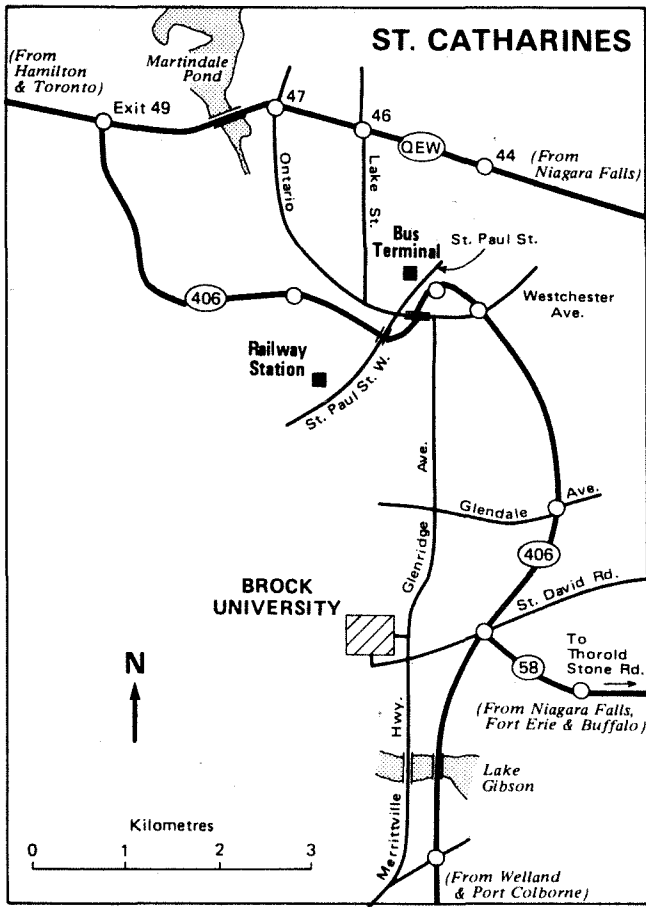
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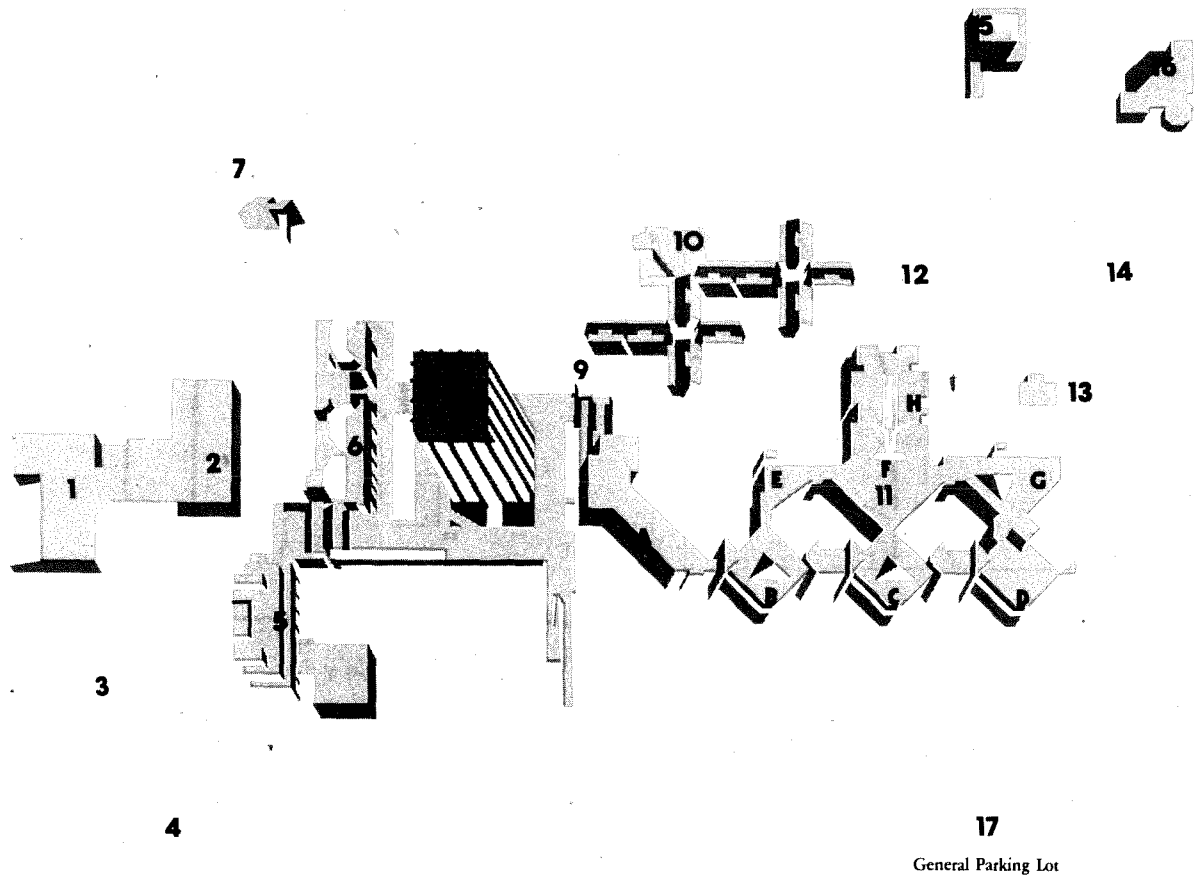
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Brock University Campus Map



Legend for Campus Map

1. Physical Education Complex
2. Swimming Pool
3. Parking Lot B
4. Parking Lot B1
5. College of Education
6. Thistle Complex
7. Alpie's Trough (pub)
8. Arthur Schmon Tower
9. Handicapped parking
10. DeCew Residence
11. Mackenzie Chown Complex
12. Parking Lot K (residence)
13. Alumni Greenhouse
14. Parking Lot M
15. Central Utilities Building
16. Concordian Lutheran Seminary
17. Parking Lot A
18. Carpentry Shop



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